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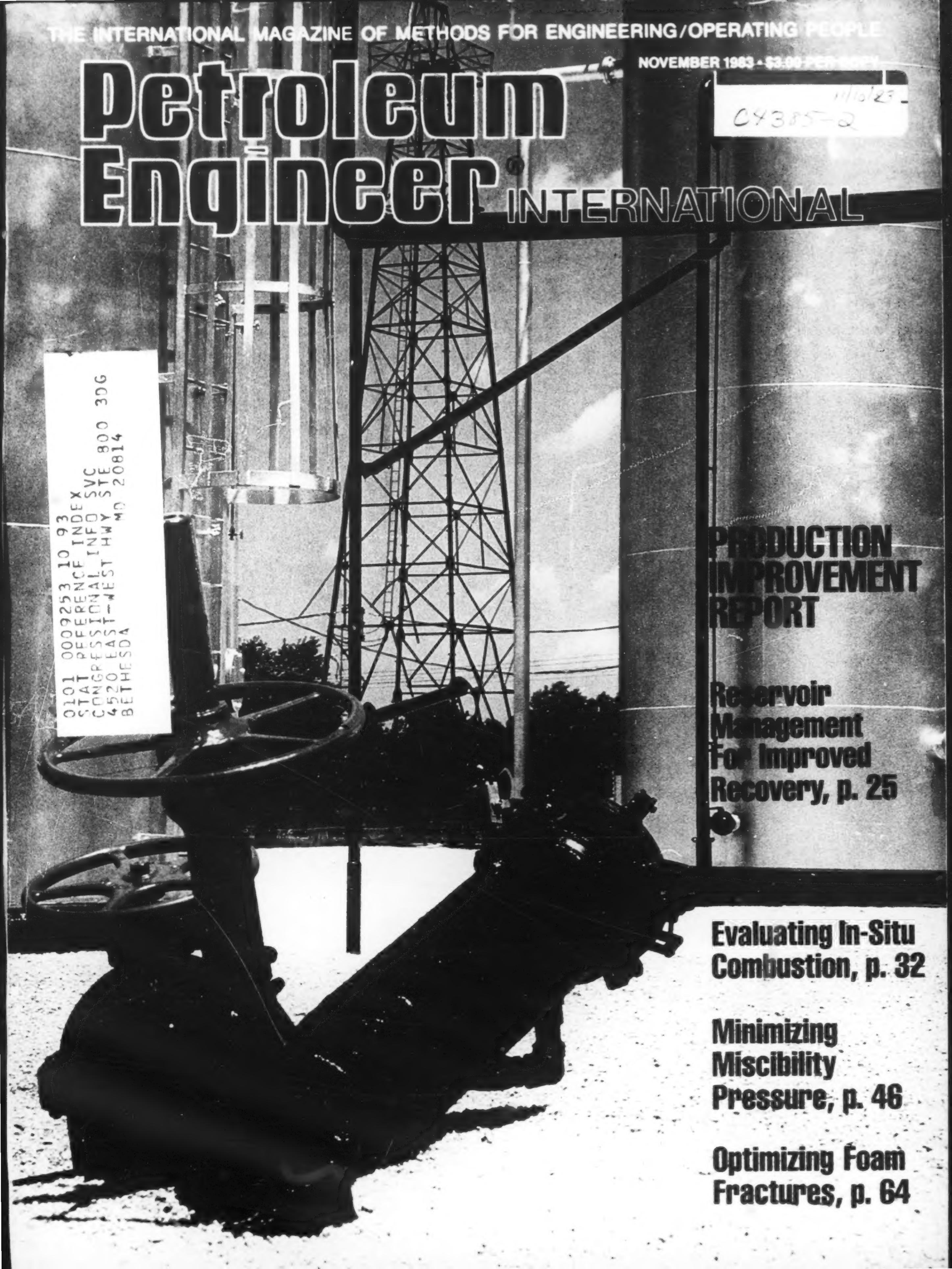

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U.S. Drillers Continue Comeback

Except for a slight dip in late September, U.S. drillers are continuing their return to normalcy. Although the accompanying graph doesn't go back far enough to show it, the pattern of this year's activity is almost exactly the same as the pattern created by U.S. drillers in 1979 – the last of the so-called normal drilling years.

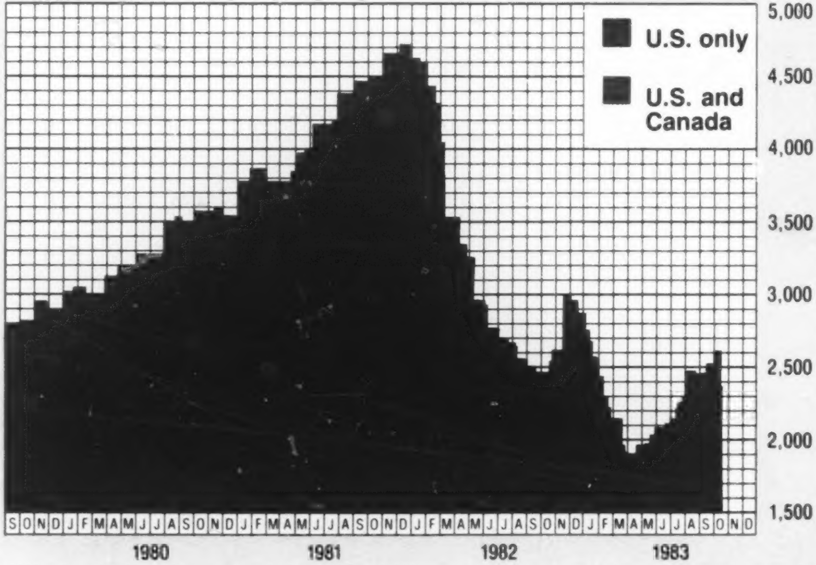
Completions in 1979 totaled 48,523. This year, on the other hand, U.S. completions had already topped 50,000 by the end of August, and they are expected to be more than 50% higher than 48,000 by the end of the year. This year's rig count, however, will top 1979's by only one or two percentage points.

With lots more completions per rig, drillers obviously are doing a better job these days. Most of the credit goes to better planning, more competent rig crews, and a return to footage rates. And you can't blame high completion totals on late reporting forever.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Sept. 19, 1983	Sept. 26, 1983	Oct. 3, 1983	Oct. 10, 1983
Alabama				
Land	10	12	13	18
Inland Waters	1	1	1	1
Offshore	1	1	1	1
Alaska				
Land	9	9	8	6
Offshore	3	4	4	3
Total	12	13	12	9
Arkansas	25	24	26	31
California				
Land	92	85	93	99
Offshore	27	21	21	20
Total	119	106	114	119
Colorado	54	59	50	51
Florida				
Land	3	3	2	2
Offshore	1	1	1	1
Total	4	4	3	3
Hawaii	1	0	0	0
Idaho	4	3	3	3
Illinois	75	67	74	71
Indiana	5	6	6	6
Kansas	131	134	124	134
Kentucky	8	7	11	9
North Louisiana	24	24	28	31
South Louisiana				
Inland Waters	49	47	51	48
Land	87	77	73	80
Offshore	100	102	107	115
Total	260	250	259	275
Michigan	37	33	31	29
Mississippi	29	33	37	35
Montana	26	27	25	33
Nebraska	8	5	10	10
Nevada	1	1	2	2
New Jersey	1	1	1	1
New Mexico	59	65	68	75
New York	12	10	9	9
North Dakota	39	42	47	50
Ohio	48	47	50	42
Oklahoma	253	248	253	264
Pennsylvania	29	30	30	27
South Dakota	1	1	0	1
Tennessee	0	1	1	1
Texas				
Offshore	43	43	40	41
Inland Waters	5	7	10	10
Dist. 1-S. Central Tex.	25	25	25	24
Dist. 2-Middle Tex. Coast	32	36	33	33
Dist. 3-Upper Tex. Coast	97	99	103	106
Dist. 4-Lower Tex. Coast	92	90	92	89
Dist. 5-Northeast Tex.	21	22	26	24
Dist. 6-Far Northeast Tex.	89	89	81	85
Dist. 7B-N. Central Tex.	48	53	46	50
Dist. 7C-W. Central Tex.	54	47	52	50
Dist. 8-Far West Tex.	143	144	151	154
Dist. 8A-West Tex.	66	65	64	66
Dist. 9-North Tex.	82	80	76	74
Dist. 10-Tex. Panhandle	52	57	58	65
Total	849	857	857	871
Utah	39	36	41	40
Virginia	3	3	3	3
Washington	1	1	1	1
West Virginia	28	36	39	44
Wyoming	107	105	110	118
Total U.S.	2,280	2,269	2,312	2,386
Canada	189	183	193	198
Canada-Offshore	17	17	15	17
U.S. and Canada	2,486	2,469	2,520	2,601



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NOVEMBER 1983 NUMBER 13 VOLUME 55

ABOUT THE COVER: New tanks in an old field are a sure sign that some form of enhanced recovery is underway. This pig launcher, and part of one battery, are in Texaco's Salem field in Illinois, supporting a polymer flood. (Photo by Jan Golon, Texaco Inc.)

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25 **Marathon Lab Seeks Non-EOR Recovery Improvement**
In an exclusive interview, William P. McKinnell Jr. says that Marathon Oil Co. is redoing all of the geology of its highly productive reservoirs to learn more about those parts of the gross section that are nonproductive.

32 **How To Estimate In-Situ Combustion Production Cost**
by Jacques Burger and Daniel Champion, Institut Français du Pétrole. Because primary production is assumed to be nil, drilling costs are assigned entirely to the combustion project.

46 **Minimizing Miscibility Pressure Aids EOR Efforts**
by Larry E. Carlisle, Jeff Davis, and Paul B. Crawford, Texas A&M University. Achieving miscibility at low reservoir pressures increases the options and may permit installation of a profitable oil recovery process.

58 **What's New ... To Improve Production**
Technology and equipment that are having a positive effect on production improvement are described in a special report designed to help readers stay abreast of products pertinent to this month's theme.

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NEXT ISSUE: The Offshore Operations Report on November 15 will cover a number of innovative projects being carried out around the world.

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PRODUCTION IMPROVEMENT REPORT

64 Correct Procedures Improve Foam Fracture Treatments

by David Mack, Clay Terry, and Mike Mooney, The Western Co. of North America. Maximization of liquid phase recovery can only be achieved if the gas and liquid are maintained in a commingled state.

76 Calculator Helps Determine Cash Flow-Present Worth

by Joseph W. Yager, Internal Revenue Service. The program multiplies production rates by product prices to arrive at gross incomes. Expenses then are subtracted to arrive at net incomes.

86 Minicomputer Assists Inventory Management

by John A. Seehafer, Amoco Production Co. Remote location inventory systems use portable, low-cost minicomputers because small operations often increase in size and scope.

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8,879-88 ft in the Wilcox formation, flowing 39° API gravity oil through a 19/64-in. choke. Flowing tubing pressure was 350 psi.

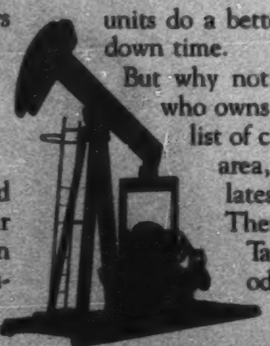
Mitchell Completes Four North Texas Wells

Mitchell Energy & Development Corp. has completed two oil and gas development wells in North Texas. One, the No. 3 J.M. Robinson A, tested 140 b/d of oil on a 22/64-in. choke with 35 psi flowing tubing pressure. Located in the Boonsville field in Wise County, the well was perforated at 4,643-50 ft.

A second Wise County well, the No. 2 Sally Tully, tested 117 b/d of oil and 1.3 MMcfd of gas on a 24/64-in. choke with 468 psi flowing tubing pressure. Perforated between 5,430 and 5,797 ft, the well is in the Chico West field.

The No. 2 Monroe Caraway, in the Boonsville field, tested 1.6 MMcfd of gas on a 22/64-in. choke with 552 psi flowing tubing pressure. Perforations were at three intervals between 5,142 and 5,958 ft.

In Jack County, the No. 3 Edna Southerland tested 2 MMcfd of gas on a 22/64-in. choke. Flowing tubing pressure was 711 psi, and perforations were between 5,330 and 5,360 ft. The well is located in the Maryetta field.



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Letters

TO THE EDITOR:

I would like to point out an error of fact published in the News Hi-lites page of your September issue (p. 1). You quote the president of Reed Rock Bit Co. as saying a recent acquisition makes Reed "the first of the big four bit manufacturers to offer tri-cone, natural diamond, and PDC bits."

That statement is not true. Hughes Tool Division began marketing its "Blue Chip" PDC bits in 1981. The first Hughes natural diamond bit, a "Blue Diamond" HD40, was run in September of 1982 in Beckham County, Oklahoma – almost a year before the statement in question appeared in print.

As far as Tri-cone bits are concerned, Hughes Tool has been the major manufacturer in that market for more than 50 years. Incidentally, "Tri-cone" is a registered trademark of Hughes Tool Co.

Thank you for setting the record straight.

Ronald L. King
Hughes Tool Co.
Houston, Tex.

Corrections

In the September 1983 issue of PEI, there were mistakes and omissions made in "Calculator Solves Casing Problem" by R. G. Munro and Carol Milo which began on page 36. The authors and editors apologize for any inconvenience this may have caused. To receive a copy of the corrections and a printout of the data registers as they should appear before running the program, circle 300 on the reader service card provided at the back of this book.

In the October 1983 issue of PEI, "Pseudotime Function Improves Gas Well Analysis," Reference 3 on page 70 is incorrect. The reference should be to "Application of Pseudotime to Buildup Test Analysis of Low-Permeability Gas Wells With Long-Duration Wellbore Storage Distortion," by W. John Lee and Stephen A. Holditch, *J. Pet. Tech.* (December 1982) page 2877.

205 Rigs Idled By Free World Drillers

International drillers saw more than 200 rigs idled during the August 1982 to August 1983 period of this report, with 25 of them occurring in the final month of the period.

Africa was the big loser, with a decline of 87 active rigs. Latin America

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Mr. Hudson will continue to be located at the Steelworks and head office of Algoma Steel in Sault Ste. Marie, Ontario.

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was down 56 and Europe was third among slumping regions with 51 idled rigs. The South Pacific area was off by 12 rigs. Only the Far East, which was even for the year, and the Middle East, which actually gained a rig, bucked the trend.

Among countries, Algeria was the biggest loser, with a decline of 50 rigs, which puts the country's utilization rate below 50%. Nigeria also experienced a substantial decline, with 56% of the rigs active a year ago being idled.

International Rotary Rig Report, prepared by Hughes Tool Co.

(Figures in parentheses indicate how many of each country's rigs are offshore rigs.)

	August 1982	July 1983	August 1983
Africa			
Algeria	90	40	40
Angola	13(10)	14(12)	10(8)
Benin	1(1)	1(1)	1(1)
Cameroun	7(6)	5(5)	5(5)
Chad	0	0	1
Gabon	11(9)	7(7)	6(6)
Guinea	0	0	1(1)
Ivory Coast	4(4)	2(2)	1(1)
Libya	28(1)	27(2)	27(2)
Morocco	5	5	5
Niger	1	0	0
Nigeria	30(13)	18(7)	17(7)
Rep. of Congo	7(6)	4(4)	4(4)
Rep. of Zaire	2(1)	1	2(1)
Senegal	1	0	0
Sierra Leone	1(1)	0	0
South Africa	2(2)	2(2)	2(2)
Sudan	2	5(1)	5(1)
Tanzania	0	1	1
Tunisia	11(3)	5(2)	5(2)
	218(58)	137(45)	131(40)
Europe			
Austria	8	9	9
Denmark	2(2)	5(4)	5(4)
France	19	19(1)	19(1)
Germany	31	24	24
Greece	4(2)	3(1)	3(1)
Holland	23(15)	16(10)	16(10)
Ireland	1(1)	3(3)	2(2)
Italy	43(7)	20(5)	20(5)
Norway	12(12)	10(10)	10(10)
Portugal	1	1	1
Spain	11(5)	8(3)	8(3)
Switzerland	1	0	0
United Kingdom	51(50)	41(38)	43(40)
Yugoslavia	25	21(2)	21(2)
	232(94)	180(77)	181(78)
Far East			
Bangladesh	7	2	2
Brunei	8(6)	10(7)	9(7)
Burma	33	41(1)	35(1)
India	51(11)	56(14)	56(15)
Indonesia	94(33)	91(24)	84(24)
Japan	19(1)	23(2)	22(2)
Malaysia	12(12)	9(9)	11(11)
Pakistan	17	17	17
Philippines	13(3)	9	8
Taiwan	5	11(1)	9(1)
Thailand	8(5)	14(7)	14(7)
	267(71)	283(65)	267(68)
Latin America			
Argentina	66	80	83
Barbados	1	1	1
Bolivia	12	8	8
Brazil	90(28)	81(31)	77(25)
Chile	7(3)	6(3)	6(3)
Colombia	17	15	18
Costa Rica	0	1	1
Ecuador	5(1)	4	4
Guatemala	3	1	1
Mexico	194(23)	188(26)	185(32)
Peru	22(6)	17(6)	19(6)
Trinidad	14(5)	8(3)	8(3)
Venezuela	72(19)	41(11)	36(11)
	503(85)	451(80)	447(80)
Middle East			
Abu Dhabi	42(24)	34(23)	31(21)
Bahrain	1	2	2
Dubai	3(3)	7(5)	8(6)
Egypt	39(25)	31(17)	30(13)
Iran	0	19(2)	19(2)
Iraq	5	25	25
Jordan	0	3	3
Kuwait	5	5	5
Oman	12(2)	8	8
Qatar	5(2)	4(2)	4(2)
Ras Al Khaimah	2(1)	0	0
Saudi Arabia	27(11)	29(14)	29(14)
Sharjah	3	1	1
Syria	15	14	14
Turkey	43	24	24
Umm Al Qaiwain	1	1	1
	203(68)	207(63)	204(58)
South Pacific			
Australia	35(8)	18(6)	21(5)
Fiji	1	0	0
New Zealand	1	2	2
Papua New Guinea	0	2(2)	2(1)
	37(8)	22(8)	25(6)
Totals	1,460 (384)	1,280 (338)	1,255 (330)

MEETING CALENDAR

November

7-17 Engineering Foam Fire Protection Systems Design I seminar, sponsored by National Foam Systems Inc. Contact Paul Gillespie, National Foam Systems Inc., 150 Gordon Drive, Lionville, Pa. 19353, (215) 363-1400.

8-9 Offshore Safety – Emergency Shut-Down Systems and Offshore Crane Operations, to be held at the Hyatt Carlton Tower Hotel, London. Contact Miss Lesley Claff, Oyez Scientific and Technical Services Ltd., Bath House (3rd Floor), 56 Holborn Viaduct, London ECIA 2EX.

9-10 Enhanced Oil Recovery – For Independents, sponsored by the Institute for the Study of Earth and Man at Southern Methodist University, to be held at the Fairmont Hotel, Dallas, Tex. Contact the ISEM at Southern Methodist University, Dallas, Tex. 75275, (214) 692-2425.

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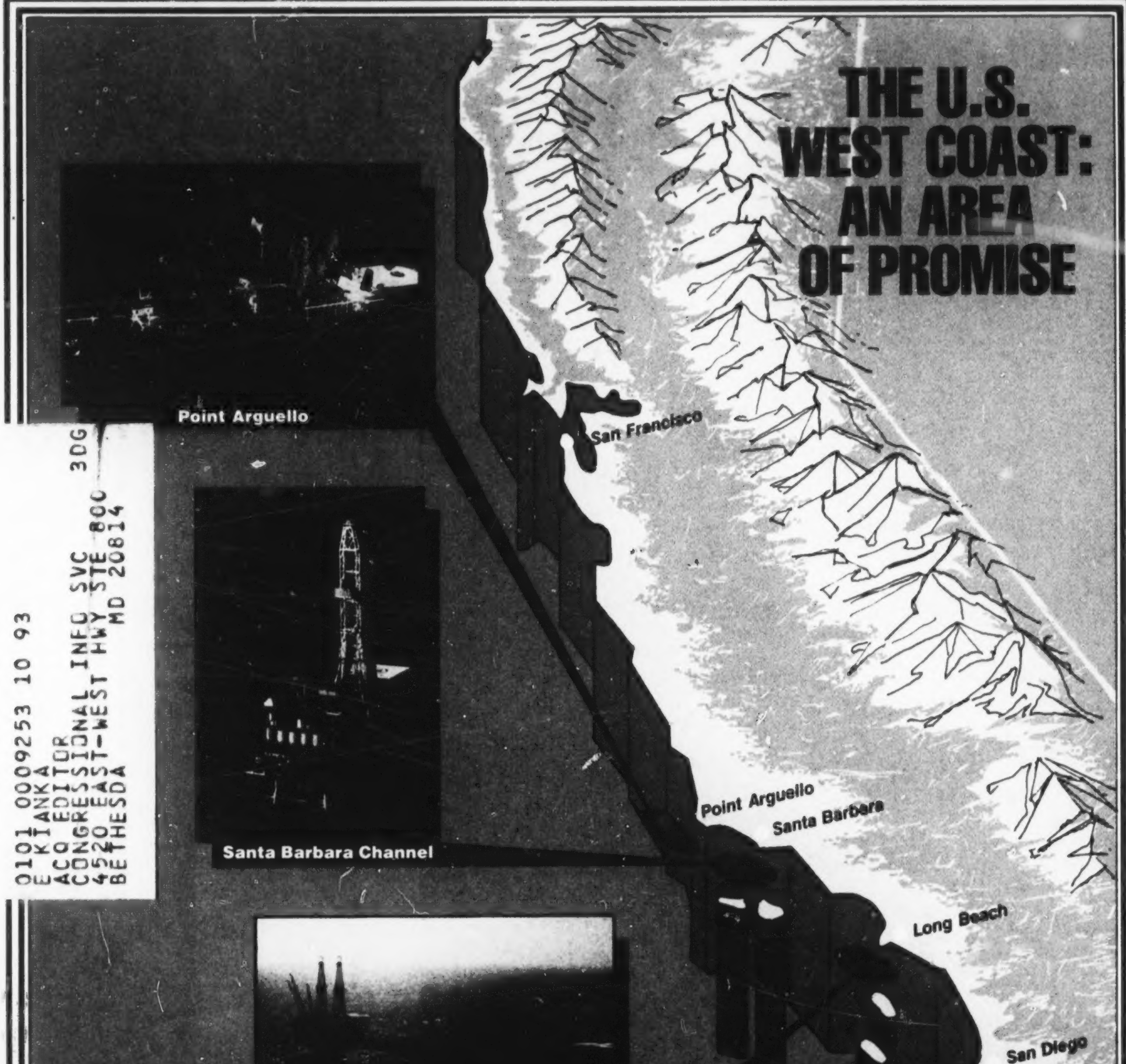
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U.S. Rotary Rig Count Passes 2,500 Mark

U.S. drillers in mid-November reached the 2,500 level for the first time since last January 24, as the year-long average for the year inched toward the 2,200 mark. As of November 14, the average U.S. rig count for 1983 stood at 2,167. The Canadian average was 189.

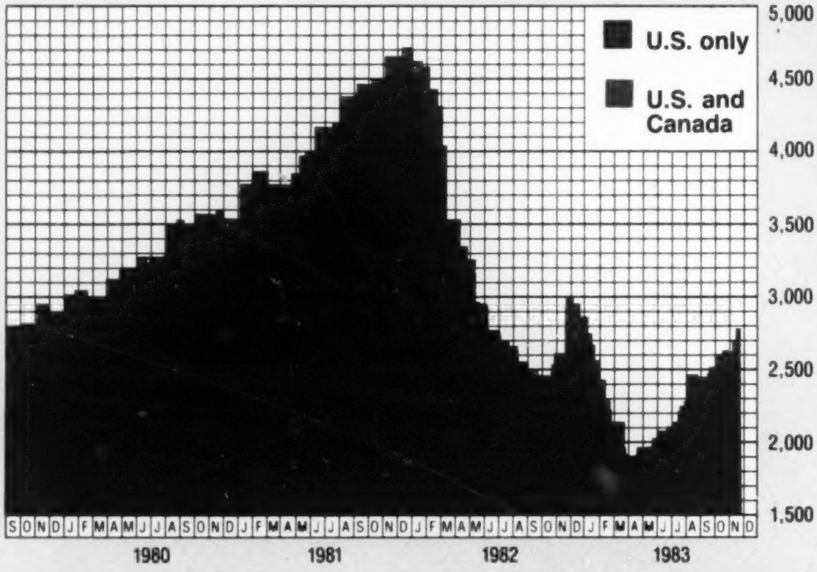
The Independent Petroleum Association of America's Cost Study Committee said last month that only 48% of U.S. rigs are being utilized, and that a large number of the idle rigs are located in major gas drilling areas. Oklahoma, southern Louisiana, and the southwestern states have 1,060 idle rigs, or nearly 39% of all U.S. idle equipment.

Approximately 5,270 rigs currently are available in the U.S., but the Cost Study Committee expects next year's rig fleet to be down by 400 to 500 rigs, or to approximately 4,800. At that time, rig utilization is projected to reach 64.6%.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Oct. 24, 1983	Oct. 31, 1983	Nov. 7, 1983	Nov. 14, 1983
Alabama				
Land	18	17	19	15
Inland Waters	1	1	1	1
Offshore	1	1	1	1
Alaska				
Land	6	6	6	8
Offshore	2	2	2	5
Total	8	8	8	13
Arkansas	30	25	25	24
California				
Land	90	97	97	88
Offshore	18	18	18	19
Total	108	115	115	107
Colorado	68	69	69	60
Florida				
Land	2	3	3	3
Offshore	1	1	1	1
Total	3	4	4	3
Georgia	1	1	1	1
Idaho	3	3	3	2
Illinois	66	61	70	70
Indiana	7	5	6	6
Kansas	142	143	147	150
Kentucky	10	10	9	9
North Louisiana	33	31	30	31
South Louisiana				
Inland Waters	51	48	50	43
Land	77	84	93	96
Offshore	113	117	126	135
Total	274	280	299	305
Michigan	33	38	37	39
Mississippi	39	37	37	42
Montana	35	32	35	36
Nebraska	6	7	7	5
Nevada	1	1	1	1
New Jersey	1	1	1	1
New Mexico	80	72	80	86
New York	13	14	16	16
North Dakota	57	64	62	62
Ohio	44	46	46	46
Oklahoma	250	247	255	289
Pennsylvania	27	26	22	25
South Dakota	2	2	3	2
Tennessee	1	1	1	1
Texas				
Offshore	42	38	41	41
Inland Waters	11	11	10	8
Dist. 1-S. Central Tex.	24	23	27	19
Dist. 2-Middle Tex. Coast	42	47	48	54
Dist. 3-Upper Tex. Coast	118	123	120	123
Dist. 4-Lower Tex. Coast	85	88	87	95
Dist. 5-Northeast Tex.	22	24	25	27
Dist. 6-Far Northeast Tex.	76	72	77	76
Dist. 7B-N. Central Tex.	46	47	43	50
Dist. 7C-W. Central Tex.	58	53	61	69
Dist. 8-Far West Tex.	156	150	136	141
Dist. 8A-West Tex.	70	68	73	81
Dist. 9-North Tex.	77	77	76	72
Dist. 10-Tex. Panhandle	59	58	54	61
Total	886	879	878	917
Utah	37	39	43	46
Virginia	3	5	3	2
Washington	1	1	1	1
West Virginia	42	34	37	38
Wyoming	120	120	130	134
Total U.S.	2,418	2,409	2,473	2,556
Canada	180	185	214	221
Canada-Offshore	13	13	13	13
U.S. and Canada	2,611	2,607	2,700	2,790



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DECEMBER 1983 NUMBER 15 VOLUME 55

ABOUT THE COVER: The most promising area in this year's Area of Promise (the Pacific Coast) lies offshore Southern California.

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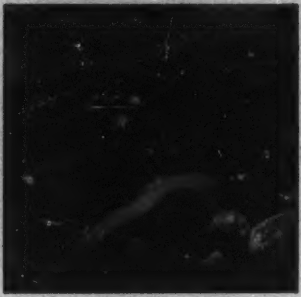

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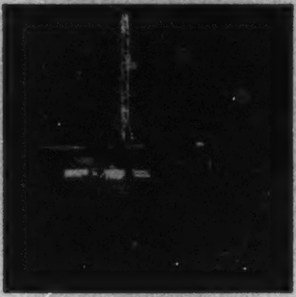

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NEXT MONTH: The annual Development Drilling issue will look at some of the more interesting drilling programs in known fields.

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1983 Drilling Costs Down More Than 17%

TABLE 1. Composite of well drilling costs and indexes by depth for the inland contiguous U.S.

Depth, ft	1981 Index (1976 = 100)	1982 Index (1976 = 100)	1982 Annual change, %	1983 Index (1976 = 100)	1983 Annual change, %	1983 Cost, $
1,250	198.7	153.2	-22.9	126.4	-17.5	32,000
2,500	192.4	151.8	-21.1	125.2	-17.5	66,000
3,750	200.7	154.1	-23.2	127.2	-17.5	103,000
5,000	217.5	165.6	-23.9	141.7	-14.4	162,000
7,500	242.1	176.5	-27.1	151.1	-14.4	340,000
10,000	257.7	187.8	-27.1	165.2	-12.1	679,000
12,500	252.8	185.4	-26.6	163.0	-12.1	1,221,000
15,000	253.8	186.8	-26.4	170.7	-8.6	2,227,000
17,500	286.1	198.6	-30.6	181.4	-8.7	3,649,000

Composite drilling cost estimates by the Department of Energy's Energy Information Administration for the years 1982 and 1983 reflect the overall downward trend from 1981 in that the costs are down for all of the drilling depths considered for both years and for oil wells, gas wells, and dry holes.

The EIA estimates cover well drilling and completion costs for 13 onshore geographical areas of the U.S. by depth bracket and type of well. The depth intervals are the same as those used by the Joint Association Survey on Drilling Costs.

The most active depth bracket for onshore drilling in 1981 was 3,750 ft, which includes all wells drilled to depths between 2,500 and 4,999 ft. The projected 1983 index for this depth interval is 127.2, which is 17.5% lower than the index for costs projected for 1982 (1976 = 100). The highest projected 1983 index number is 181.4, which is projected for the 17,500-ft depth (Table 1).

Annual cost reductions for 1982 varied from 21.1% for all 2,500-ft wells to 30.6% for 17,500-ft wells. Annual decreases for 1983 vary from 8.6% for 15,000-ft wells to 17.5% for wells in the three shallowest drilling depths. And 2-year cost declines vary from 32.7% for all 15,000-ft wells to 37.6% for 7,500-ft wells.

The average cost of an onshore oil well drilled to 2,500 ft (the most active depth) during 1981 was $117,000. The 1982 projected average cost was 22.1% lower than the 1981 cost, and the 1983 cost is down another 17.5%. In the group of the most active depths in each of the 13 drilling areas, projected oil well drilling cost changes for 1982 varied from a decrease of 5.2% for 2,500-ft wells in the Northeast to a decrease of 47.9% for 10,000-ft wells in the South Louisiana area.

For gas drilling, the 5,000-ft bracket was the most active onshore depth during 1981. Average 1981 drilling cost was $255,000 per well at that depth interval, and the EIA says this cost decreased by 18.3% in 1982 and another 15.4% in 1983.

Gas-well drilling cost indexes (1976 = 100) for all depths, in all areas, for 1983 are projected to vary from a low of 75.8 (the lowest index in the EIA study) for 2,500-ft wells in the Ark-La-Tex area to a high of 218.4 for 15,000-ft gas wells in the Southeastern area. The 2-year declines in costs ranged from 3.4% for 5,000-ft wells in the Northeastern area to 61.1% (the deepest 2-year cost decline in the EIA study) for 17,500-ft wells in the South Louisiana area.

Dry holes bottomed out at the 3,750-ft depth level most often in 1981, when the national average drilling cost for that depth was $118,000. Projected national average annual changes for that depth are -27.7% for 1982 and -14.4% for 1983.

The group of the most frequently drilled dry hole depths in each area indicates changing costs for 1982 ranging from an increase of 1.9% for 2,500-ft holes in the Northeastern area to -46.8% for 10,000-ft holes in the South Louisiana area. Additional cost changes projected for 1983 vary from a decrease of 28.1% in the Mid-Continent area to a decrease of 3.3% in the Southeast.

The 2-year drilling cost changes for all depths, in all areas of the U.S., vary from a decline of 0.6% for 3,750-ft dry holes in the Northeastern area to a decline of 55.1% for 17,500-ft dry holes in the South Louisiana area. Dry hole drilling cost indexes for 1983 are projected to vary from a low of 96.3 for 5,000-ft dry holes in the Ark-La-Tex area to a high of 250.3 (the highest 1983 index in the EIA study) for 2,500-ft holes in the Western area.

Copies of the complete study (DOE/EIA-0347[82-83]) are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Transierra Recompletes Liberty County Gasser

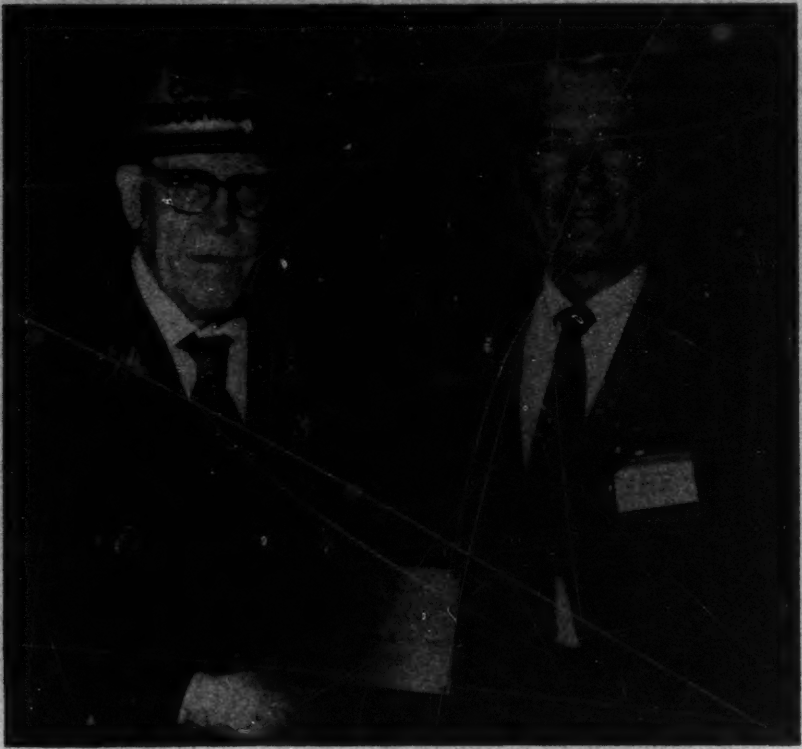
Transierra Exploration Corp. has successfully recompleted the B. E. Quinn No. 1 well in Liberty County, Texas. The well is flowing 1 MMcfd of gas from the Yequa formation at 7,050-55 ft through a 9/64-in. choke. Tubing pressure is 2,225 psi.

Dean McGee Is Chief Roughneck

Dean A. McGee, a pioneer in the discovery and development of oil fields in Oklahoma, became the 29th prominent oil man to be honored as Chief Roughneck when he received the prestigious award during last month's annual membership luncheon of the Independent Petroleum Association of America in New Orleans.

The 1983 Chief Roughneck, who headed Kerr-McGee Corp. from 1954 until his retirement earlier this year, was presented the award (complete with plaque, hard hat, lapel pin, and a bust of the Joe Roughneck character) by James E. Chenault Jr., president and chief executive officer of Lone Star Steel Co. Lone Star Steel founded the Roughnecks' Clubs, and the Chief Roughneck Award, in the early 1950s.

(Continued)



Dean A. McGee (left) receives the trappings of office as Chief Roughneck 1983 from James E. Chenault Jr., president of Lone Star Steel Co. The presentation was made during last month's meeting of the Independent Petroleum Association of America in New Orleans.

McGee's career as an oil man got underway more than 50 years ago, soon after he received a BS degree in mining engineering at the University of Kansas. He served as chief geologist for Phillips Petroleum Co. for 10 years before agreeing to "temporarily serve" as executive vice president for Kerlyn Oil Co., the forerunner of Kerr-McGee Corp. That "temporary" service lasted more than 40 years.

All Regions Participate In World Drilling Slump

The drop of more than 200 active Free World drilling rigs between September 1982 and September 1983 left no region of the world unscathed, although some were more scathed than others.

Africa, for example, accounted for a major portion of the slump with a loss of 80 active rigs. Latin America was not far behind, with a decline of 67 rigs. Europe suffered a 47-rig decline, while the Middle East was off 11. The Far East was down by 8 rigs, and the South Pacific region saw its rig count drop from 33 to 30 – a loss of 3.

Steepest decline for any one country took place in Algeria, which lost 50 rigs during the year. Argentina, on the other hand, managed to add 15 rigs to the active roster.

International Rotary Rig Report, prepared by Hughes Tool Co.

(Figures in parentheses indicate now many of each country's rigs are offshore rigs.)

	Sept. 1982	Aug. 1983	Sept. 1983
Africa			
Algeria	90	40	40
Angola	13(9)	10(8)	10(8)
Benin	1(1)	1(1)	1(1)
Cameroun	7(6)	5(5)	5(5)
Chad	1	0	0
Gabon	10(8)	6(6)	6(6)
Guinea	1(1)	0	0
Ivory Coast	4(4)	1(1)	1(1)
Libya	28(1)	27(2)	27(2)
Morocco	5	5	5
Niger	1	0	0
Nigeria	25(10)	17(7)	16(6)
Rep. of Congo	5(4)	4(4)	4(4)
Rep. of Zaire	2(1)	2(1)	2(1)
Senegal	1	0	0
Sierra Leone	1(1)	0	0
South Africa	2(2)	2(2)	2(2)
Sudan	2	5(1)	5(1)
Tanzania	0	1	1
Tunisia	11(3)	5(2)	5(2)
	210(51)	131(40)	130(39)
Europe			
Austria	8	9	9
Denmark	2(2)	5(4)	5(4)
France	14	19(1)	20(1)
Germany	31	24	24
Greece	4(2)	3(1)	3(1)
Holland	23(15)	16(10)	15(7)
Ireland	0	2(1)	1(1)
Italy	34(7)	20(5)	20(5)
Norway	11(11)	10(10)	7(7)
Portugal	1	1	1
Spain	12(5)	8(3)	9(3)
Switzerland	1	0	0
United Kingdom	54(53)	43(40)	45(43)
Yugoslavia	25	21(2)	14(2)
	220(95)	181(78)	173(74)
Far East			
Bangladesh	7	2	2
Brunei	11(8)	9(7)	9(7)
Burma	33	35(1)	31(1)
India	51(11)	56(15)	57(16)
Indonesia	96(36)	84(24)	93(27)
Japan	21(2)	22(2)	20(1)
Malaysia	14(14)	11(11)	10(10)
Pakistan	17	17	17
Philippines	13(3)	8	7
Taiwan	2(1)	9(1)	5(1)
Thailand	8(5)	14(7)	14(7)
	273(80)	267(68)	265(70)
Latin America			
Argentina	69(1)	83	84
Barbados	1	1	1
Bolivia	10	8	8
Brazil	95(33)	77(25)	78(27)
Chile	7(3)	6(3)	6(3)
Colombia	19	18	13
Costa Rica	1	1	1
Dominican Rep.	1	0	0
Ecuador	5(1)	4	5
Guatemala	2	1	1
Mexico	194(23)	185(32)	185(28)
Peru	22(6)	19(6)	16(6)
Trinidad	15(6)	8(3)	9(4)
Venezuela	70(17)	36(11)	36(12)
	510(90)	447(80)	443(80)
Middle East			
Abu Dhabi	45(27)	31(21)	29(19)
Bahrain	1	2	1
Dubai	3(3)	8(6)	8(5)
Egypt	39(25)	30(13)	30(13)
Iran	0	19(2)	20(2)
Iraq	5	25	18
Jordan	0	3	3
Kuwait	5	5	6
Oman	12(2)	8	13
Qatar	5(2)	4(2)	3(2)
Ras Al Khaimah	2(1)	0	0
Saudi Arabia	29(12)	29(14)	25(13)
Sharjah	3	1	0
Syria	15	14	16
Turkey	43	24	24
Umm Al Qaiwain	1	1	1
	208(72)	204(58)	197(54)
South Pacific			
Australia	32(9)	21(5)	27(11)
New Zealand	1	2	2
Papua New Guinea	0	2	1
	33(9)	25(6)	30(11)
Totals	1,455 (397)	1,255 (330)	1,238 (328)

Gulf, Occidental Test Oman Well

Gulf Oman Petroleum Ltd. and Occidental of Oman Inc. have successfully tested their Safah-2X exploration well in the 2.4-million-acre Suneinah Block in the Sultanate of Oman.

The well flowed approximately 1,650 b/d of 30° API gravity oil through a ½-in. choke from depths of around

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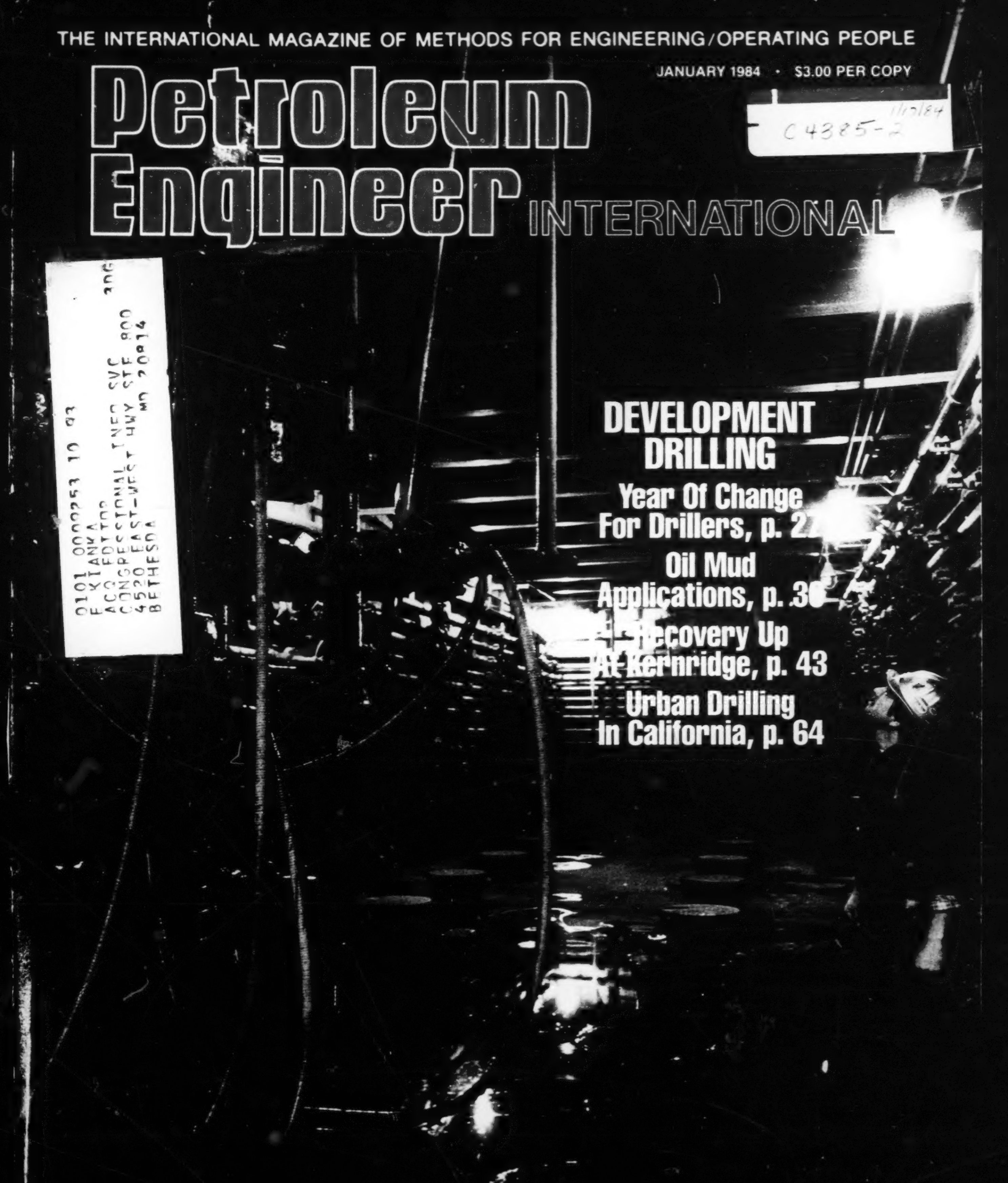

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Average U.S. Rotary Rig Count Tops 2,200 for 1983

With 2 weeks left to go in 1983 (as of this writing), the U.S. rotary rig count averaged 2,208 for the year. The November average, however, was 2,572, which topped the 2,500 average logged during the same month in the previous year. It was the first time that has happened since March 1982.

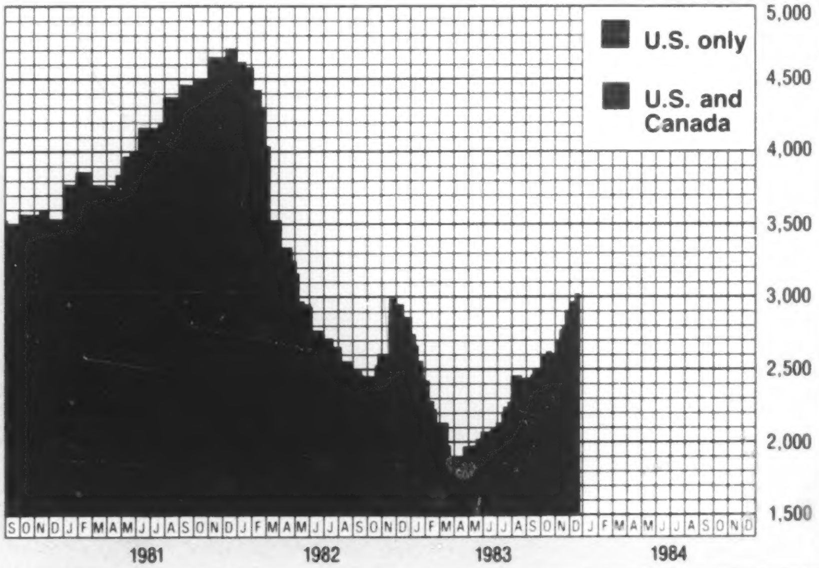
Canadian drillers also have increased activity during recent months, to the point where their year-long average approaches 200. A major boost to Canadian drilling came in the form of incentives offered by Saskatchewan last summer. They resulted in a record number of rigs at work in that province by the end of November.

The long-term outlook for Canadian drilling, however, is not too bright. The Canadian Association of Oilwell Drilling Contractors looks for rig utilization this year to be lower than 50% – not much better than last year's 42%.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Nov. 21, 1983	Nov. 28, 1983	Dec. 5, 1983	Dec. 12, 1983
Alabama				
Land	15	15	13	14
Inland Waters	1	1	1	0
Offshore	1	1	0	0
Alaska				
Land	8	8	9	9
Offshore	4	4	4	4
Total	12	12	13	13
Arkansas	23	24	25	24
California				
Land	94	97	93	96
Offshore	19	21	17	20
Total	113	118	110	116
Colorado	63	65	65	66
Florida	4	4	5	7
Georgia	1	1	1	1
Idaho	2	2	2	2
Illinois	65	66	88	75
Indiana	7	7	8	5
Kansas	152	147	149	147
Kentucky	8	8	10	10
North Louisiana	29	35	36	37
South Louisiana				
Inland Waters	47	49	52	48
Land	91	103	102	95
Offshore	139	139	128	135
Total	306	326	318	315
Michigan	38	38	41	40
Mississippi	41	37	42	38
Montana	39	33	30	38
Nebraska	8	8	8	9
Nevada	1	3	4	3
New Jersey	1	1	1	1
New Mexico	83	83	76	85
New York	10	8	10	8
North Dakota	62	62	69	68
Ohio	53	68	68	59
Oklahoma	305	332	342	355
Pennsylvania	27	33	30	32
South Dakota	2	2	2	2
Tennessee	2	3	2	2
Texas				
Offshore	44	46	46	48
Inland Waters	8	9	8	7
Dist. 1-S. Central Tex.	19	19	18	21
Dist. 2-Middle Tex. Coast	46	44	46	43
Dist. 3-Upper Tex. Coast	121	121	117	110
Dist. 4-Lower Tex. Coast	99	100	107	111
Dist. 5-Northeast Tex.	28	25	25	28
Dist. 6-Far Northeast Tex.	83	85	85	86
Dist. 7B-N. Central Tex.	49	55	63	61
Dist. 7C-W. Central Tex.	68	62	72	75
Dist. 8-Far West Tex.	142	148	140	141
Dist. 8A-West Tex.	88	84	89	93
Dist. 9-North Tex.	71	74	75	83
Dist. 10-Tex. Panhandle	66	62	59	60
Total	932	934	950	967
Utah	50	53	53	56
Virginia	2	1	1	1
Washington (State)	1	1	1	1
West Virginia	32	33	21	41
Wyoming	131	131	145	145
Total U.S.	2,593	2,667	2,704	2,746
Canada	230	242	262	281
Canada-Offshore	12	13	14	16
U.S. and Canada	2,835	2,922	2,980	3,043



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operating people

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ABOUT THE COVER: This month's cover shows the underground well cellar at Chevron USA's Paxton drill site in Pacioma, Calif. For the full story, see page 64.

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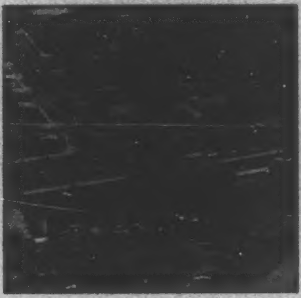

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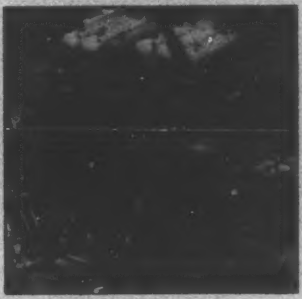

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Petroleum Engineer® INTERNATIONAL

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by Steven D. Moore, Drilling Editor. Foremost challenges in developing the Paxton drill site were to drill and produce oil within a limited, 2.7-acre spacing, and with minimum impact to the immediate environment.

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by W. B. Bleakley, Editor. Europe's largest fracturing operation, the job is believed to also be the world's largest in terms of sintered bauxite used. Near the end of the job, bauxite was being injected at 9,000 lb/min.

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U.S. Drilling Costs Down Dramatically In '83

With costs down approximately 10% to 15% more than in 1982, there couldn't be a better time than right now to drill wells, according to the Cost Study Committee of the Independent Petroleum Association of America. They add that materials and supplies are more than ample, prospects are better, and returns are up.

For these reasons, the IPAA forecasters see an upturn in drilling in the next several years, "not back to the halcyon days of 1981, but, nevertheless, up."

Their report on the U.S. supply of tubular goods reflects some of the problems of the cutback in drilling during recent years. Steel shipments are off more than 80% in the first 7 months of 1983, compared with the like period in 1982. Reported wells and footage drilled, however, are down only 15% to 20%, indicating that supplies of tubulars are coming from inventories. The problem has been compounded by a 400-ft decline in the average depth of wells drilled during the first 7 months of 1983.

The 1983 rotary rig census data prepared by Reed Rock Bit Co. indicate that 5,273 rigs are available for drilling wells to 3,000 ft and deeper. Utilization rate of these rigs was 48.2% as of August 1983.

The report found 559 rigs removed from the available list, but another 188 rigs were added to the fleet. This resulted in a net attrition for the year of 371 rigs.

A much higher percentage of nonactive rigs were found stacked in yards in 1983 rather than on location. Some 24.2% of the rigs were stacked in yards, while 27.6% were stacked on location.

The report found 441 marine rigs available, which was a decline from 505 in 1982.

A significant number of the idle land rigs are found in the major gas drilling areas. Oklahoma, south Louisiana, and the Southwestern states had 1,060 idle rigs, or 38.7% of all U.S. idle equipment.

This year's fleet is expected to be down by 400 to 500 rigs, or to approximately 4,800, and rig utilization is projected at 64.6%. The outlook is not as bright as desired, the Cost Study Committee says, but signs indicate the drilling industry is headed upward.

A limited survey made by the Direct Cost Subcommittee indicates that payments to drilling contractors dropped about 38% from January 1982 to July 1983, while the cost of purchased items fell a total of 34% over the same period. Cost reductions are believed to have stemmed from a combination of the law of supply and demand plus improved efficiency of operators, drilling contractors, and service companies.

TABLE 1. Total U.S. supply of tubular goods, rig activity, and footage drilled, as compiled by the IPAA Cost Study Committee

											Jan. – July		% change,
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1982	83 vs 82
Tubular goods, thousand tons													
Mill shipments	1,736	2,261	2,577	1,678	2,405	2,647	2,458	3,612	2,241	1,759	296	1,547	−80.9
Less exports	−198	−348	−430	−169	−140	−155	−285	−133	−126	−67	−5	−91	−94.5
Plus imports	140	109	217	219	487	591	457	1,036	2,389	2,180	266	1,768	−85.0
U.S. supply	1,678	2,022	2,364	1,728	2,752	3,083	2,630	4,515	6,502	3,872	557	3,224	−82.7
Rotary rigs running*	1,194	1,472	1,660	1,658	2,001	2,259	2,177	2,912	3,970	3,106	2,099	3,518	−40.3
Wells drilled	27,602	32,893	39,097	41,455	46,479	48,513	51,263	62,462	80,537	88,106	44,431	51,863	−14.3
Footage drilled, thousands of feet	138,938	153,164	178,605	185,345	215,010	231,394	243,208	288,936	366,249	401,483	189,851	244,957	−22.5
Tons oil country tubular goods per thousands of feet	12.1	13.2	13.2	9.3	12.8	13.3	10.8	15.6	17.6	9.6	2.9	13.2	−78.0
Average depth of wells	5,034	4,656	4,566	4,471	4,626	4,770	4,744	4,626	4,548	4,557	4,273	4,723	−9.5
Total													
Rotary rigs**	1,767	1,894	2,028	2,204	2,482	2,851	3,182	3,672	4,803	5,644	5,273	5,644	−6.6
Stacked rigs**	294	125	151	225	83	66	308	130	100	2,419	2,734	2,419	+13.0
Active rigs	1,473	1,769	1,877	1,979	2,399	2,785	2,874	3,542	4,703	3,225	2,539	3,225	−21.3

* Number of rigs actually drilling footage

** Excludes rigs not capable of drilling over 3,000 ft

TABLE 1. U.S. stripper well data for the past 10 years

Year	No. of wells	Production, MM bbl	Abandonments	Average daily production per well
1973	355,229	385,684	13,756	2.97
1974	366,095	411,936	13,779	3.08
1975	367,872	394,163	13,478	2.93
1976	365,733	392,191	9,916	2.93
1977	368,930	392,532	9,000	2.91
1978	374,635	391,633	8,380	2.86
1979	386,310	394,405	7,668	2.79
1980	395,176	401,095	6,614	2.77
1981	409,539	426,502	7,215	2.85
1982	416,493	441,951	9,426	2.90

U.S. Stripper Well Production Up By 15 Million Barrels

U.S. stripper oil wells produced almost 442 million bbl of oil in 1982 to register an increase of more than 15 million bbl over 1981. The increase failed to match the 25 million bbl gain credited to 1981, but it marked the fourth straight year in which stripper well production has increased in the U.S.

And it is in sharp contrast to the pre-oil-embargo days, when production reductions averaged 15 million bbl/yr.

The most recent National Stripper Well Survey, jointly published by the Interstate Oil Compact Commission and the National Stripper Well Association, says that 441,951,028 bbl of stripper oil were produced in the U.S. during 1982 by 416,493 stripper wells. By comparison, there were 409,539 stripper wells at the end of 1981, during which year they produced 426,502,365 bbl of oil. There was, therefore, a 1-year increase of 6,954 wells and an increase in production of 15,448,663 bbl.

Between 1972 and 1980, yearly abandonments of stripper wells decreased from 13,483 to 6,614. In 1981, however, abandonments increased by about 600 nationwide to 7,216. And in 1982, they increased by 2,211, to 9,426. G.E. Stahl, president of the National Stripper Well Association, attributes the increase in abandonments to decreases in oil prices, and he warns that any change in stripper well tax provisions could cause an even greater increase in well abandonments.

Price Claims Footage Record

J.A. Price and Co. of Odessa, Tex., is claiming a footage record for a 7⅞-in. drill bit that they say was run in five different wells for a footage total of 9,520. Cumulative hours came to 95, making a rate of 100.21 ft/hr and a cost per foot of 23¢.

The bit, a V537 made by Varel Manufacturing Co., was used on Price's Rig 3 while drilling for Amoco Production Co. on four wells in Ector County and one in Andrews County. Bruce Kimmell, drilling superintendent for J.A. Price, said that the formations drilled are typical of West Texas, being anhydrite to approximately 700 ft, red bed down to 1,000 ft, and salt through 2,900 ft, which was as deep as the bit was run.

Free-World Drilling Off By 258 Rigs

International rotary drilling continued to decline during October in all regions of the Free World except the South Pacific, where a strong showing by Australia contributed to a seven-rig gain over the same month in 1982.

The next best effort was turned in by the Far East, which lost only six rigs during the year.

Latin America's rig loss total came to 72, so Africa, with a decline of 88 active rigs, becomes the undisputed loss leader.

International Rotary Rig Report, prepared by Hughes Tool Co.
(Figures in parentheses indicate how many of each country's rigs are offshore rigs.)

	Oct. 1982	Sept. 1983	Oct. 1983
Africa			
Algeria	90	40	35
Angola	13(9)	10(8)	10(8)
Benin	1(1)	1(1)	1(1)
Cameroun	7(6)	5(5)	5(5)
Chad	1	0	0
Gabon	10(8)	6(6)	6(6)
Guinea	1(1)	0	0
Ivory Coast	5(5)	1(1)	1(1)
Libya	28(1)	27(2)	27(2)
Morocco	5	5	5
Niger	1	0	0
Nigeria	25(10)	16(6)	16(6)
Rep. of Congo	5(4)	4(4)	4(4)
Rep. of Zaire	2(1)	2(1)	2(1)
Senegal	1	0	0
Sierra Leone	1(1)	0	0
South Africa	2(2)	2(2)	2(2)
Sudan	2	5(1)	3
Tanzania	0	1	1
Tunisia	11(3)	5(2)	5(2)
	211(52)	130(39)	123(38)
Europe			
Austria	8	9	9
Denmark	2(2)	5(4)	5(4)
France	13	20(1)	18
Germany	31	24	24
Greece	4(2)	3(1)	3(1)
Holland	23(15)	15(7)	19(9)
Ireland	1	1(1)	1(1)
Italy	34(7)	20(5)	20(5)
Norway	13(13)	7(7)	9(9)
Portugal	1	1	1
Spain	12(5)	9(3)	8(3)
Switzerland	1	0	0
United Kingdom	55(54)	45(43)	44(42)
Yugoslavia	25	14(2)	14(2)
	223((98)	173(74)	175(76)
Far East			
Bangladesh	6	2	2
Brunei	12(8)	9(7)	9(7)
Burma	33	31(1)	29(1)
India	51(10)	57(16)	58(17)
Indonesia	91(33)	93(27)	91(25)
Japan	23(2)	20(1)	21(2)
Korea	0	0	1
Malaysia	13(13)	10(10)	11(11)
Pakistan	17	17	11
Philippines	11(2)	7	7
Taiwan	1(1)	5(1)	8(1)
Thailand	8(5)	14(7)	12(6)
	266(74)	265(70)	260(70)
Latin America			
Argentina	59(1)	84	77
Barbados	1	1	1
Bolivia	10	8	8
Brazil	93(31)	78(27)	69(23)
Chile	7(3)	6(3)	6(3)
Colombia	23(1)	13	18
Costa Rica	1	1	1
Ecuador	6(1)	5	5
Guatemala	2	1	1
Mexico	194(23)	185(28)	185(28)
Peru	21(6)	16(6)	16(6)
Trinidad	12(4)	9(4)	9(4)
Venezuela	73(19)	36(12)	34(13)
	502(89)	443(80)	430(77)
Middle East			
Abu Dhabi	44(27)	29(19)	27(19)
Bahrain	1	1	1
Dubai	2(2)	8(5)	9(5)
Egypt	40(22)	30(13)	30(13)
Iran	11(2)	20(2)	20(2)
Iraq	28	18	18
Jordan	0	3	3
Kuwait	5	6	3(1)
Oman	12(2)	13	12
Qatar	5(2)	3(2)	2(1)
Ras Al Khaimah	2(1)	0	0
Saudi Arabia	29(12)	25(13)	25(13)
Sharjah	3	0	0
Syria	15	16	16
Turkey	43	24	24
Umm Al Qaiwain	1	1	0
	241(71)	197(54)	190(54)
South Pacific			
Australia	28(8)	27(11)	32(10)
New Zealand	1	2	3(2)
Papua New Guinea	0	1	1
	29(8)	30(11)	36(12)
Totals	1,472 (392)	1,238 (328)	1,214 (327)

Oil Companies Post Higher Earnings

Oil companies posted a modest increase in net income for the second straight quarter.

The 84 companies responding to our survey reported $8.5 billion in earnings for the third quarter, a 9.5% increase over the same period in 1982. Profit margin for the group rose from 5.1% to 5.5%.

Improved U.S. oil and chemical markets, higher crude oil production, cost-cutting and productivity gains helped Exxon earn 21% more in the third quarter.

Mobil's 42% increase is attributed to substantial gains in foreign petroleum earnings.

Lower financing expenses and corporate overhead, combined with better refining and marketing results gave Sun a 10% earnings rise.

Phillips Petroleum's net income jumped 15% due to higher crude oil production following the acquisition of General American Oil.

Lower crude oil prices and natural gas demand were blamed for the 2% drop in earnings at Shell Oil.

Texaco's net income increased 9% as a result of improved production and downstream earnings.

Standard Oil of Ohio's earnings dropped 11% due to lower income from exploration and production operations, lower crude oil prices, and higher exploration expenses.

Lower operating and administrative costs plus improved productivity paid off for Gulf Oil. Earnings increased 74%.

Standard Oil of Indiana posted

GAS COMPANIES' THIRD QUARTER FINANCIAL REPORTS

	Three months ending Sept. 30						Nine months ending Sept. 30						Profit Margin	
	Revenues ($MIL)			Earnings ($MIL)			Revenues ($MIL)			Earnings ($MIL)				
Company	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982
Alabama Tennessee N.G.	28.2	29.6	-4.5	1.3	1.3	0.5	101.7	96.6	5.2	4.4	4.4	-0.1	4.3	4.5
American Nat. Resources	666.2	510.8	30.4	18.8	0.8	2250.0	2393.3	2257.5	6.0	111.1	95.3	16.6	4.6	4.2
ARKLA[1]	257.0	274.6	-6.4	7.7	12.4	-38.3	1306.5	1262.7	3.5	78.2	93.6	-16.5	6.0	7.4
Coastal Corp.	1365.9	1317.3	3.7	24.1	21.2	13.7	4308.8	4218.0	2.2	69.3	43.0	61.1	1.6	1.0
Columbia Gas	765.4	793.1	-3.5	4.5	-15.6		3486.4	3662.9	-4.8	96.9	115.4	-16.1	2.8	3.2
Consolidated Natural Gas	477.4	498.1	-4.2	5.2	6.2	-16.7	2420.8	2327.3	4.0	139.7	118.1	18.2	5.8	5.1
The El Paso Company	1124.1	1067.8	5.3	25.1	32.7	-23.4	3331.2	3175.1	4.9	62.2	72.1	-13.7	1.9	2.3
ENSERCH	886.2	968.3	-8.5	17.3	31.3	-44.9	2680.0	2874.2	-6.8	66.3	124.6	-46.8	2.5	4.3
Houston Natural Gas[2]	722.5	728.3	-0.8	26.3	59.6	-55.9	2962.4	3180.7	-6.9	190.2	262.3	-27.5	6.4	8.2
InterNorth	985.9	803.1	22.8	30.1	17.2	74.8	3403.8	2970.6	14.6	164.2	150.5	9.1	4.8	5.1
KN Energy	110.2	109.2	0.9	8.6	4.1	111.7	495.8	484.9	2.2	32.1	24.8	29.1	6.5	5.1
Mountain Fuel Supply[1]	105.7	90.8	16.4	0.4	2.3	-83.6	630.8	526.4	19.9	58.2	37.7	54.3	9.2	7.2
NOVA, An Alberta Corp.	891.0	859.0	3.7	35.0	40.0	-12.5	2880.0	2447.0	17.7	104.0	99.0	5.1	3.6	4.0
ONEOK Inc.	203.5	206.8	-1.6		7.8	-99.4	805.4	833.2	-3.3	20.8	41.6	-50.1	2.6	5.0
Pacific Lighting	1067.3	1027.1	3.9	36.6	22.5	62.9	3415.3	3208.3	6.5	110.8	83.7	32.3	3.2	2.6
Panhandle Eastern	666.0	757.1	-12.0	22.1	48.5	-54.5	2433.1	2506.2	-2.9	110.6	184.5	-40.1	4.5	7.4
Pioneer Corp.	272.6	303.4	-10.2	18.6	26.1	-28.6	779.8	835.2	-6.6	60.2	72.6	-17.0	7.7	8.7
Sonat Inc.	561.6	563.1	-0.3	50.4	48.3	4.3	1988.5	1990.1	-0.1	168.6	160.6	5.0	8.5	8.1
Southern Union Co.	202.1	223.4	-9.5	0.4	0.4	1.4	789.8	817.3	-3.4	18.5	16.1	14.9	2.3	2.0
Texas Eastern Corp.[1]	1300.8	1315.0	-1.1	56.1	43.3	29.6	5517.6	5394.2	2.3	138.1	208.1	-33.6	2.5	3.9
Texas Gas Resources	497.6	650.8	-23.5	23.5	25.7	-8.5	1929.5	2107.4	-8.4	53.1	83.9	-36.7	2.8	4.0
TransCanada Pipelines	775.2	752.0	3.1	57.4	49.6	15.7	2414.5	2567.2	-5.9	160.7	138.9	15.7	6.7	5.4
Transco Energy Co.	797.8	927.7	-14.0	30.0	30.4	-1.3	2850.0	2808.4	1.5	91.7	108.3	-15.3	3.2	3.9
Union Gas Ltd.[3]	187.1	159.7	17.2	1.5	-1.3		432.6	368.5	17.4	8.7	4.1	110.7	2.0	1.1
United Energy Resources	843.9	1287.5	-34.5	-18.1	40.6		2976.3	4237.5	-29.8	33.8	159.1	-78.8	1.1	3.8
Westcoast Transmission	193.2	151.5	27.5	15.5	17.3	-10.7	703.2	791.3	-11.1	48.6	55.0	-11.7	6.9	7.0
TOTAL	15954.4	16375.0	-2.6	498.4	572.7	-13.0	57437.2	57940.6	-0.9	2200.9	2557.4	-13.9	3.8	4.4

[1] Twelve months. [2] Ends July 31. [3] Six months.

Third Quarter Report

OIL COMPANIES' THIRD QUARTER FINANCIAL REPORTS

	Three months ending Sept. 30						Nine months ending Sept. 30						Profit Margin	
	Revenues ($MIL)			Earnings ($MIL)			Revenues ($MIL)			Earnings ($MIL)				
Company	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982
Adams Resources & Energy	45.8	46.0	-0.3	0.4	-2.9		134.4	151.5	-11.2	-0.2	-2.7			
Adobe Oil & Gas	41.3	51.2	-19.4	5.6	5.8	-2.7	124.4	154.9	-19.7	16.7	35.3	-52.6	13.4	22.8
Amerada Hess	2352.8	2124.1	10.8	75.1	80.1	-6.2	6100.8	6277.7	-2.8	148.3	125.0	18.6	2.4	2.0
American Petrofina	565.1	540.1	4.6	23.0	12.7	81.0	1583.5	1723.3	-8.1	31.9	39.6	-19.4	2.0	2.3
American Quasar	9.2	12.9	-28.7	0.4	-0.3		29.9	41.4	-27.8	-3.3	1.2			2.9
Argo Petroleum	5.0	6.0	-16.7	-0.6	-0.6		15.0	17.0	-11.6	-2.3	-1.6			
Asamera	111.5	126.7	-12.0	4.4	4.0	7.6	298.2	350.0	-14.8	0.4	4.1	-89.6	0.1	1.2
Ashland Oil	2147.3	2269.7	-5.4	45.8	49.5	-7.6	6028.4	6700.5	-10.0	40.3	75.9	-46.9	0.7	1.1
Atlantic Richfield	6378.4	6659.4	-4.2	405.1	446.9	-9.4	19220.8	19895.4	-3.4	1128.8	1242.1	-9.1	5.9	6.2
Beard Oil	7.6	8.1	-5.6	-0.6	-0.9		23.0	26.9	-14.6	-1.8	-0.3			
Buttes Gas & Oil	31.8	36.0	-11.7	0.4	0.4	8.8	95.9	119.7	-19.9	1.8	1.1	60.4	1.9	0.9
Callon Petroleum[1]	6.9	4.9	39.6	0.3	-0.2									
Commonwealth Oil Refining	0.9	21.9	-95.9	-4.9	-5.9		18.5	288.1	-93.6	-11.5	-22.1			
Consolidated O & G	9.5	9.1	4.5	0.2	-1.5		28.2	30.6	-8.0	-0.5	-3.8			
Crown Central Petroleum	471.1	450.2	4.6	3.6	8.4	-56.9	1170.9	1279.5	-8.5	-3.9	1.5			0.1
Crystal Oil	50.7	46.8	8.3	-1.5	1.7		144.8	152.9	-5.3	-2.7	-0.2			
Diamond Shamrock	1014.5	733.2	38.4	39.7	42.3	-6.1	2848.3	2422.0	17.6	73.9	138.9	-46.8	2.6	5.7
Dorchester Gas	259.5	283.8	-8.5	6.2	3.2	93.4	1369.8	1159.1	18.2	17.7	17.8	-0.9	1.3	1.5
Dyco Petroleum	11.4	15.2	-24.6	1.8	4.1	-55.6	35.1	43.7	-19.7	6.1	11.9	-49.3	17.2	27.3
Energy Reserves Group	34.8	39.6	-12.3	2.6	0.1	1861.9	107.8	121.4	-11.2	9.1	-0.2		8.4	
ENSTAR Corp.	74.2	82.8	-10.3	7.2	11.5	-37.1	226.9	262.3	-13.5	20.4	31.0	-34.1	9.0	11.8
Equity Oil	5.6	5.6	-0.2	1.1	0.2	455.1	16.4	17.3	-5.4	3.3	1.9	75.1	20.3	11.0
Exxon	23342.0	25203.0	-7.4	1225.0	1017.0	20.5	69928.0	77165.0	-9.4	3360.0	2705.0	24.2	4.8	3.5
Felmont	20.1	18.8	7.2	4.1	3.8	6.0	59.3	58.0	2.3	10.9	10.8	1.2	18.4	18.6
Forest Oil Corp.	30.6	40.2	-23.9	2.1	4.7	-54.5	97.0	116.1	-16.4	7.5	9.9	-24.1	7.7	8.5
Freeport McMoRan	194.7	186.1	4.6	26.6	19.7	34.8	585.1	556.1	5.2	67.1	61.7	8.8	11.5	11.1
Galaxy Oil	3.6	3.8	-6.8	-0.4	-0.5		9.3	10.7	-12.7	1.3	2.0	-31.0	14.4	18.3
Getty Oil	2939.5	3109.7	-5.5	183.7	182.3	0.8	8965.0	9378.9	-4.4	255.5	518.9	-50.8	2.8	5.5
Gulf Oil Corp.	7514.0	7547.0	-0.4	276.0	159.0	73.6	21401.0	22498.0	-4.9	681.0	674.0	1.0	3.2	3.0
Hadson Petroleum	5.1	5.5	-8.0	-14.6	2.0		17.0	24.9	-31.7	-11.7	11.2			45.2
Hamilton Bros. Petroleum	42.0	37.2	12.8	1.9	4.5	-59.0	118.0	126.1	-6.5	12.8	8.9	44.2	10.8	7.0
Helmerich & Payne	51.8	89.0	-41.8	10.4	18.6	-43.8	184.7	279.6	-33.9	37.2	62.2	-40.1	20.2	22.2
Hershey Oil	2.1	1.6	36.4	0.2		662.5	5.8	5.2	10.9	0.7	0.4	73.4	11.5	7.4
Holly Corp.[2]	102.1	100.9	1.2	-0.3	-2.2		341.1	339.3	0.5	4.7	5.1	-7.6	1.4	1.5
Howell Corp.	34.9	53.3	-34.6	0.4	0.4	3.9	108.8	184.1	-40.9	0.7	1.9	-61.9	0.7	1.0
Howell Petroleum	13.9	13.2	4.8	1.9	1.5	25.6	51.9	56.9	-8.9	6.4	6.0	6.0	12.3	10.6
Inexco Oil	42.4	51.5	-17.7	3.0	2.8	9.8	128.4	170.1	-24.5	9.4	14.8	-36.6	7.3	8.7
Kerr-McGee Corp.	898.3	913.5	-1.7	39.7	56.8	-30.1	2584.4	2762.0	-6.4	101.3	136.2	-25.7	3.9	4.9
Lear Petroleum	69.1	54.4	27.1	7.0	1.5	360.6	178.2	157.3	13.3	15.7	0.3	6088.1	8.8	0.2
Louisiana Land & Exp.	313.6	259.1	21.0	24.2	19.2	25.9	877.9	873.9	0.5	75.1	53.1	41.5	8.6	6.1
Mapco Inc.	540.8	489.6	10.5	13.6	20.2	-32.7	1518.1	1452.2	4.5	38.0	54.1	-29.8	2.5	3.7
May Petroleum	10.3	7.6	35.6	0.1	-0.2		25.4	22.7	12.1	-1.6	0.8			3.4
Maynard Oil	6.2	6.8	-8.8	0.7	-0.3		21.7	26.2	-17.4	-1.0	-1.0			
MCO Holding	39.3	43.9	-10.5	0.6	3.1	-80.4	122.6	131.1	-6.5	7.7	9.9	-22.8	6.2	7.6
Mesa Petroleum	95.0	99.7	-4.7	44.2	29.4	50.2	[illegible]	303.7	-0.2	97.1	91.2	6.5	32.1	30.0
MGF Oil	14.0	25.1	-44.5	-19.5	-19.7		47.9	83.4	-42.6	-43.3	-21.8			
Mitchell Energy & Dev.	226.0	239.8	-5.8	20.1	23.7	-15.5	705.0	705.9	-0.1	58.4	57.9	0.9	8.3	8.2
Mobil Corp.	14200.0	15400.0	-7.8	404.0	284.0	42.3	42900.0	47600.0	-9.9	1056.0	815.0	29.6	2.5	1.7
Moran Energy	20.5	20.9	-1.5	1.0	0.5	105.6	64.4	74.3	-13.2	3.2	6.4	-50.4	4.9	8.6
Murphy Oil	565.7	641.0	-11.8	39.8	43.9	-9.4	1894.9	1983.9	-4.5	108.0	119.0	-9.2	5.7	6.0
Noble Affiliates	73.2	94.9	-22.9	5.7	17.7	-67.6	221.0	317.3	-30.3	18.7	60.4	-69.1	8.4	19.0
Norris Oil	636.6	695.6	-8.5	-205.3	87.0		2081.5	2032.6	2.4	-147.4	98.6			4.9
Occidental Petroleum	4908.0	4412.5	11.2	151.8	25.1	504.8	14413.8	12924.5	11.5	320.7	153.6	108.8	2.2	1.2
Oxoco	12941.2	10467.8	23.6	2282.6	1820.2	25.4	35350.9	26823.4	31.8	6312.9	5252.7	20.2	17.9	19.6
Pennzoil Co.	587.2	563.5	4.2	34.6	52.5	-34.0	1714.4	1739.4	-1.4	103.3	135.2	-23.6	6.0	7.8
Petro-Lewis[3]	83.9	78.7	6.6	1.6	2.8	-42.9								
Petroleum Devel.	3.2	4.0	-18.3		-0.1		11.6	10.2	13.4	0.4	-0.5		3.4	
Phillips Petroleum	3890.0	3996.0	-2.7	176.0	153.0	15.0	11316.0	11829.0	-4.3	474.0	491.0	-3.5	4.2	4.2
Prairie Producing Co.	5.0	6.5	-23.3	0.8	1.[illegible]	-35.4	14.4	20.0	-28.2	2.4	3.4	-30.5	16.4	17.0
Quaker State	226.2	245.5	-7.9	9.3	11.5	-19.4	685.1	718.8	-4.7	27.5	31.4	-12.3	4.0	4.4
Sabine Corp.	25.1	29.2	-13.9	3.2	-0.9		83.3	83.1	0.2	10.0	0.2	3997.1	11.9	0.3
Seneca Oil	3.3	4.9	-31.5	2.0	2.6	-21.5	12.2	15.7	-21.9	5.3	4.7	12.4	43.6	30.3
Shell Oil	5122.0	5090.0	0.6	449.0	442.0	1.6	14638.0	15037.0	-2.7	1084.0	1166.0	-7.0	7.4	7.8
Southland Royalty	77.7	86.8	-10.5	4.8	7.0	-30.8	239.9	274.6	-12.6	20.0	23.8	-16.0	8.3	8.7
Southwestern Energy[4]	10.8	12.2	-11.3	1.7	2.1	-19.6	70.7	59.4	19.1	13.9	11.6	19.8	19.6	19.5
Standard California	7654.0	8666.0	-11.7	509.0	459.0	10.9	21741.0	28056.0	-22.5	1187.0	952.0	24.7	5.5	3.4
Standard Indiana	7201.0	7677.0	-6.2	584.0	559.0	4.5	22083.0	22400.0	-1.4	1409.0	1411.0	-0.1	6.4	6.3
Standard Ohio	2995.0	3317.0	-9.7	435.0	487.0	-10.7	8862.0	10313.0	-14.1	1188.0	1415.0	-16.0	13.4	13.7
Statex Petroleum[5]	3.0	2.5	22.7	-0.5			9.5	9.5	-0.6	-1.2	1.4			14.8
Sun Co.	3770.0	3950.0	-4.6	167.0	152.0	9.9	11290.0	12160.0	-7.2	392.0	386.0	1.6	3.5	3.2
Superior Oil	469.7	499.8	-6.0	117.6	39.1	200.9	1345.8	1536.4	-12.4	178.0	199.4	-10.7	13.2	13.0
Tenneco	3433.0	3631.0	-5.5	144.0	182.0	-20.9	10608.0	11083.0	-4.3	475.0	531.0	-10.5	4.5	4.8
Tesoro Petroleum	989.4	636.9	55.3	18.1	12.6	43.7	2826.6	2469.2	14.5	48.4	48.1	0.6	1.7	1.9
Texaco Inc.	10567.0	11833.0	-10.7	331.0	303.0	9.2	30623.0	36312.0	-15.7	977.0	975.0	0.2	3.2	2.7
Texas American Energy	31.3	38.7	-19.0	-2.1	-1.5		148.1	153.5	-3.6	-0.8	-1.4			
Tosco Corp	539.4	902.0	-40.2	1.4	22.1	-93.7	2013.1	2552.2	-21.1	-240.2	129.4			5.1
Total Petroleum N.A.	540.9	553.2	-2.2	11.3	8.3	36.6	1551.7	1649.3	-5.9	-35.1	7.5			0.5
Union California	2730.0	2770.0	-1.4	180.2	212.8	-15.3	8010.0	8160.0	-1.8	447.9	578.9	-22.6	5.6	7.1
Universal Resources	10.9	13.9	-21.8	-0.7	1.5		34.7	45.5	-23.8	-2.0	6.7			14.8
Wainoco Oil	11.0	11.5	-4.8	0.2	-3.3		33.9	37.8	-10.4	1.4	-9.7		4.1	
Wilshire Oil of Texas	2.5	3.4	-27.6	0.4	0.4	0.7	7.5	9.8	-23.0	1.6	1.1	51.3	21.3	10.8
Wiser Oil	12.7	13.1	-5.7	2.2	2.2	-0.8	40.0	40.9	-2.2	8.6	9.4	-8.9	21.4	23.0
Woods Petroleum	16.9	19.8	-14.6	2.5	4.9	-48.3	52.1	61.0	-14.5	10.2	16.5	-38.1	19.6	27.1
Worldwide Energy	18.0	15.0	19.4	1.0	0.6	63.4	54.0	41.4	30.3	-0.4	-0.4			
TOTAL	134561.2	138577.4	-2.9	8327.1	7595.0	9.6	395051.8	417356.3	-5.3	21720.4	21199.2	2.5	5.5	5.1

[1] Ends Aug. 31. [2] Ends April 30. [3] Year ends June 30. [4] Twelve months. [5] Ends July 31.

5% higher net income due to improved refined product margins and increased earnings from chemical operations.

Lower crude oil prices, higher oil and gas production expenses, and lower petroleum product margins were responsible for Atlantic Richfield's 9% drop in net income.

Occidental Petroleum's third quarter earnings jumped 505% as a result of the acquisition of Cities Service.

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Lower sulphur and natural gas volumes translated into a 34% decline in net income for Pennzoil.

Diamond Shamrock's earnings dropped 6% as strong competition in refined product markets kept a lid on profit margins.

Operating income from all three segments of American Petrofina's operations improved in the third quarter as earnings rose 81%.

Declines in oil and gas operations and contract drilling and trucking subsidiaries caused Noble Affiliates' net income to plunge 68%.

Louisiana Land and Exploration had fewer dry holes plus reduced losses from mining operations. Earnings increased 26%.

Beard Oil reported a net loss of $635,000 in the third quarter. Earnings were adversely affected by a decline in oil and gas sales and drilling and well servicing revenues.

Continued pressure on refined product margins was cited for the 57% decline at Crown Central Petroleum.

Moran Energy's higher production levels resulted in an increase of 106%.

The 26 gas companies in our survey posted a 13% decline in net income in the third quarter. Profit margin for the group fell from 4.4% to 3.8%.

Consolidated Natural Gas posted a 13% decline in earnings due to depressed conditions in the manufacture and marketing of equipment.

Southern Union reported a $373,000 loss, as oil refining and marketing continued to be depressed.

Lower earnings and sales volume resulted in net loss of $18 million for United Energy Resources.

The El Paso Company's net income fell 23% due to lower production volumes and reduced sales to their interstate pipeline.

Improvement in the natural gas pipeline business helped Texas Eastern earn 30% more in the third quarter.

Union Gas earned $1.5 million compared to a net loss in 1982. Increased gas sales and higher customer rates were the main contributors.

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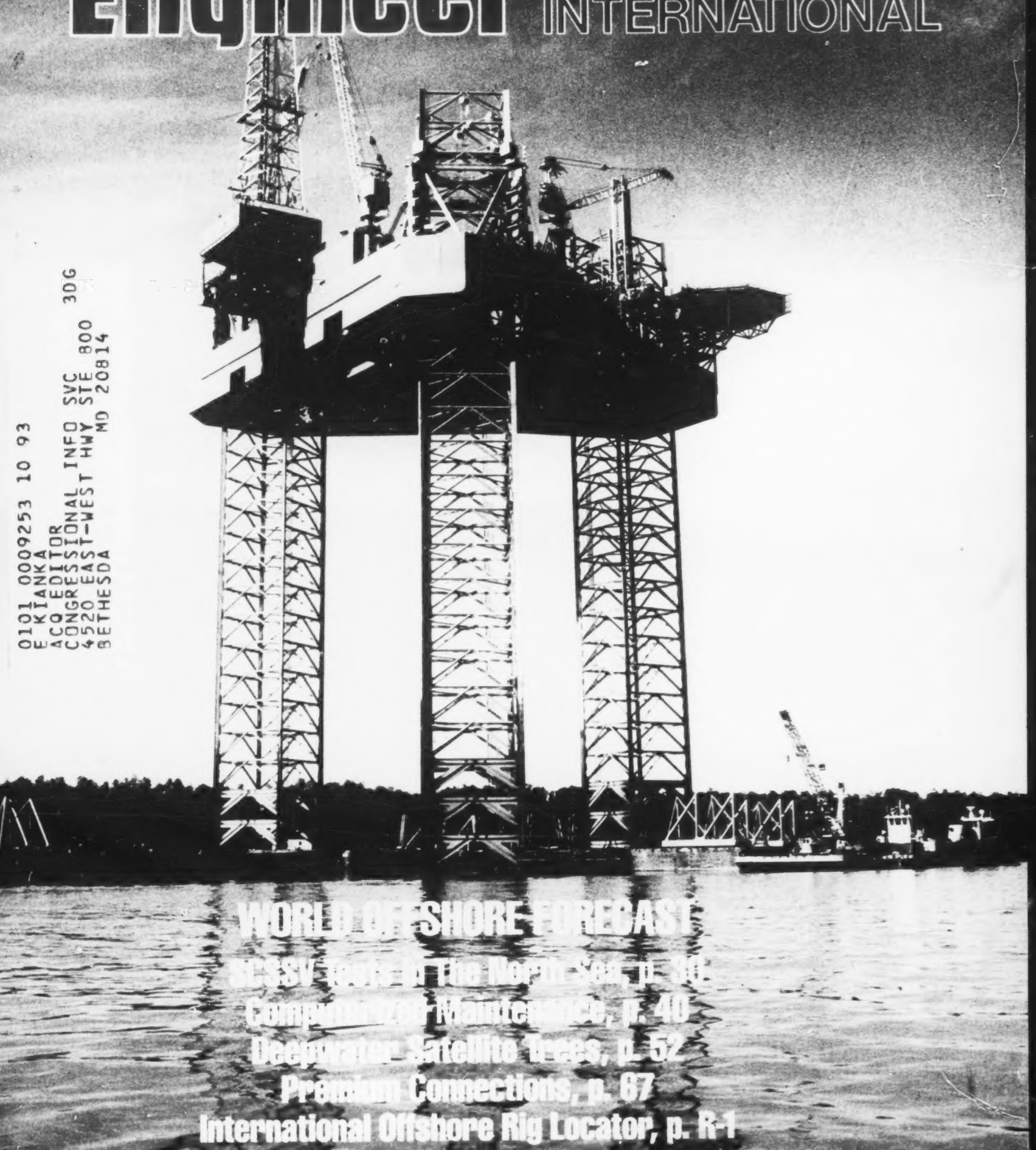

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U.S. Drillers Begin 1984 With 2,700 Rigs Turning

U.S. drillers began 1984 with just about the same number of rigs turning as they did at the beginning of 1983. On Jan. 9, 1984, in fact, the rig count came to within one rig of the count for the same week in 1983.

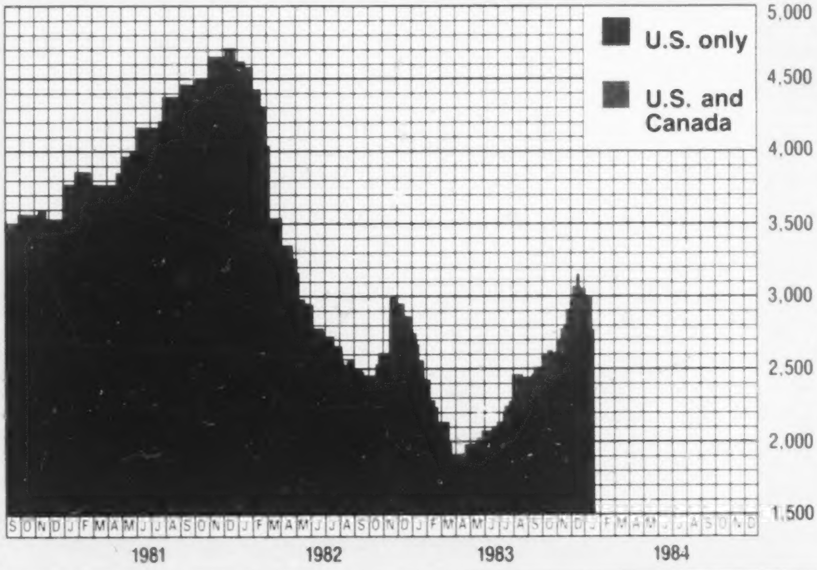
It is too early to tell, of course, whether this year's count will emulate 1983's steep decline, as depicted in the accompanying graph. But, chances are that any decline this year will be more like the traditional spring slump that has occurred most years ever since Hughes Tool Co. started counting active rigs.

Year-end statistics put the average rig count for 1983 at 2,232. This represents a drop of more than 800 rigs from the 1982 average, but the trend throughout most of 1983 was up, while most of the previous year's trend was decidedly down. Average Canadian rig counts for the two years were within four rigs of each other. Right at the 200 mark.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Dec. 19, 1983	Dec. 26, 1983	Jan. 2, 1984	Jan. 9, 1984
Alabama				
Land	14	16	18	19
Inland Waters	0	0	0	1
Alaska				
Land	9	9	8	8
Offshore	4	4	4	4
Total	13	13	12	12
Arkansas	29	27	26	24
California				
Land	105	102	100	82
Offshore	20	20	22	23
Total	125	122	122	105
Colorado	58	61	63	60
Florida	6	5	6	8
Georgia	1	1	1	1
Idaho	2	2	2	2
Illinois	63	61	61	56
Indiana	7	7	7	8
Kansas	146	151	124	143
Kentucky	7	8	8	10
North Louisiana	39	34	32	41
South Louisiana				
Inland Waters	51	56	58	59
Land	103	103	113	113
Offshore	144	149	150	155
Total	337	342	353	368
Michigan	41	42	44	42
Mississippi	41	38	33	34
Montana	39	43	43	42
Nebraska	11	13	9	8
Nevada	3	3	3	2
New Jersey	1	1	1	1
New Mexico	90	90	91	85
New York	8	9	12	11
North Dakota	73	79	72	66
Ohio	59	60	60	63
Oklahoma	376	418	375	374
Pennsylvania	28	32	29	31
South Dakota	2	2	2	2
Tennessee	3	3	2	2
Texas				
Offshore	49	45	44	43
Inland Waters	9	8	8	6
Dist. 1-S. Central Tex.	27	40	33	25
Dist. 2-Middle Tex. Coast	38	33	33	36
Dist. 3-Upper Tex. Coast	112	116	109	117
Dist. 4-Lower Tex. Coast	107	104	101	105
Dist. 5-Northeast Tex.	29	25	20	18
Dist. 6-Far Northeast Tex.	82	78	63	71
Dist. 7B-N. Central Tex.	56	61	50	51
Dist. 7C-W. Central Tex.	76	73	73	76
Dist. 8-Far West Tex.	146	155	144	147
Dist. 8A-West Tex.	96	85	75	72
Dist. 9-North Tex.	87	83	79	79
Dist. 10-Tex. Panhandle	65	71	61	59
Total	979	977	893	905
Utah	54	56	54	55
Virginia	0	0	1	1
Washington	1	1	1	1
West Virginia	40	44	44	42
Wyoming	143	145	138	140
Total U.S.	2,800	2,870	2,710	2,724
Canada	283	297	209	264
Canada-Offshore	16	15	14	12
U.S. and Canada	3,099	3,182	2,933	3,000



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FEBRUARY 1984 NUMBER 2 VOLUME 56

ABOUT THE COVER: The first of a new series of rugged jackups, Rowan Gorilla I is shown just after launching at Marathon LeTourneau Co.'s Vicksburg, Miss., shipyard. Look for a full report on the big rig next month in PEI.

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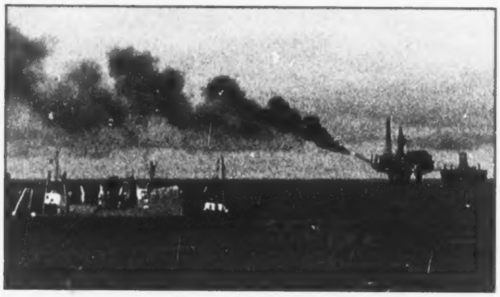

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Petroleum Engineer INTERNATIONAL

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Rig Utilization Rises As Offshore Drilling Makes Spotty Recovery

by Harrison T. Brundage, *Gulf Coast Editor*

The world offshore drilling outlook for 1984 is one of cautious optimism. There are bright spots, particularly in the U.S. Gulf Coast, where huge amounts of new federal acreage became available to drillers in 1983 and 1984. Figures from the May and August 1983 federal Gulf of Mexico sales are shown in Table 2. Many new discoveries, including those in Matagorda Island and in Eugene Island Block 315, continue to enhance the outlook.

Though a brief article which proposes to be worldwide in scope is necessarily incomplete, some important recent discoveries are shown in Table 1.

Outside the U.S., the North Sea, particularly in the British, Norwegian, and Danish portions, is an area of continued development activity and renewed exploration. Far northern (arctic) Norway is one of the world's foremost mainly unexplored oil and gas provinces.

Activity in the Mediterranean Sea, notably offshore Spain and Tunisia, and in the Adriatic Sea continues. New discoveries offshore northwestern Australia enhance the outlook there. Indonesia continues as an area of strong interest. The big play offshore China and adjacent submerged areas of Japan and Korea is just beginning to generate momentum.

But on a worldwide basis, the outlook for strong activity is spotty. Even with drilling contractors who are active offshore, the phrase, "stay alive till '85" still was being heard at year-end 1983.

Negative factors contributing to a spotty outlook include disappointing results in the main Triassic zones in the Sohio No. 1 Mukluk well in Alaska. Late in 1983 drilling had penetrated the most prospective zones and found oil-stained, water-saturated strata only. The well was being drilled to about 9,700 ft TD to evaluate the Lisburne formation, which has highly localized, spotty development, and is much less prospective than the Triassic zones.

Also hindering arctic Alaska and Canada is the prospect of huge northern Norwegian gas reserves. Like all European gas fields, Norway enjoys a competitive advantage over North American arctic gas because of proximity to Western European gas markets.

South America and Africa may see a slow 1984 offshore. Most South American national oil firms have financial problems. Offshore Trinidad may be fairly active, with Amoco having made some interesting discoveries there. Argentina and Venezuela may see relatively slow activity this year, while offshore drilling in Colombia, Trinidad, and Brazil may hold reasonably steady.

Drilling from the Eugene Island Block 315 Platform A offshore Louisiana. Oil production is expected to begin in mid-1984 and yield up to 7,500 b/d. (Photo courtesy Sohio Petroleum Co.)

Offshore eastern Canada, the Sable Island area discoveries still are stalled by questions of whether the gas

British Petroleum Co. continues drilling and production operations from the Magnus platform in the UK sector of the North Sea. (Photo courtesy of British Petroleum.)

can be liquified on the island and shipped to markets which are still undetermined. Development offshore Newfoundland, in the complexly faulted Hibernia field area, is slowed by severe weather conditions. Earliest date for starting Hibernia production has been put at 1988.

Water depth drilling records continue to be broken routinely (Table 5). The Shell Oil Co. Wilmington Canyon Block 587 test is one. Offshore the U.S. East Coast in the new record water depth of 6,448 ft, the well was being drilled December 9 at 13,800 ft, en route to a proposed TD of 14,500 ft. Shell is trying to evaluate the possibility of a buried Jurassic reef trend which may lie far offshore the U.S. East Coast in deep waters.

Gulf of Mexico

The Gulf of Mexico boasts the densest offshore drilling in the world except for a few localized areas such as Lake Maracaibo, Venezuela. As of Dec. 12, 1983, a total of 223, or 31% of the world's 717-rig offshore fleet, was present in the U.S. Gulf of Mexico area (Table 3). Furthermore, the Gulf had an 83% rig utilization rate, compared to 80% worldwide. There is some indication that rigs were being moved there from as far away as Southeast Asia, as owners anticipate more work in U.S. Gulf of Mexico.

The more active areas generate the greater number of innovations – guyed tower and tension leg platforms, and huge new jackup rigs. Current data indicate plans to produce hydrocarbons in at least three separate locales, in water depths greater than 1,000 ft – by Conoco in Green Canyon Blocks 141 and 184, and by Gulf Oil in Mississippi Canyon Blocks 24 and 25 (Table 4).

Shell recently made a discovery in Green Canyon Block 65, located far offshore, about 125 miles south-southwest of New Orleans, in 1,150 ft of water. The first sidetracked hole has been completed, and the second was underway at year-end 1983. Total depths were 12,609 and 13,440 ft, respectively. Greater oil and gas pay thicknesses were found than anticipated. Water depth is great, and geology is complex. Further drilling is needed to determine whether this find is commercial. The Zapata Saratoga was doing the drilling.

Amoco's Matagorda Island Block 623 Platform B offshore Texas is the scene of five gas discoveries in the Block 622-623 area, where the firm installed three multiwell platforms during the past 15 months. Further development drilling is planned. Platform A on Block 623 is slated to go on production in October 1984 at about 50 MMcfd. Platform C is to start 160 MMcfd production by late 1985 or sooner.

Returning to the eastern part of the Gulf of Mexico, Union Texas Petroleum Corp. is evaluating the Breton Sound Block 39 gas discovery of January 1982, and may install a four-pile production platform or a lease production barge.

Sohio's Eugene Island Block 315 field is a welcome development. As noted in a recent article mentioned in the bibliography, Eugene Island Block 330 field is the largest known oil-producing field in federally owned U.S. offshore waters.

More recently, Sohio found and developed the Block 315 field. The field is mainly oil, with one gas sand at about 4,300 ft and several deeper oil sands down to 6,750 ft. Sohio has drilled 10 wells – nine oil and one gas. Near year-end 1983, the company had completed three oil wells and one gas well, with the other completions to come and the expectation of production startup in mid-1984 at rates up to 7,500 b/d eventually.

There are many recent significant near-shore discoveries, as indicated in Table 1. Mobil Oil Corp. well 76-1, its initial test on State of Alabama leases in Mobile Bay, reached 21,113 ft TD on Oct. 6, 1979. This well tested 12.2 MMcfd of dry natural gas below 20,000 ft. Subsequently another deep discovery was made farther offshore in federal waters. These finds are significant in that Jurassic prospects evidently extend seaward from the Mobile Bay Graben. Furthermore, Mobil found shallow gas production in Mobile Bay, which may tie in with Louisiana production trends swinging around the southeast flank of the Wiggins Anticline. Alabama has scheduled a lease sale for next August, with the nominations deadline coming up March 30, 1984.

Mexico's offshore drilling outlook might be indicated by the report of late last year that the contractor Perforadora Mexico S.A. received a $32 million loan from the Export Development Corp. of Canada and the Bank of Montreal for its Zacateca jackup. The rig was reported in a Brownsville, Tex., yard pending completion of Perforadora's financial arrangements. As of last November, Petroleos Mexicanos (Pemex) was running seven offshore rigs, including three barges in the Gulf of Campeche, and four jackups.

U.S. West Coast

The offshore California outlook is much enhanced by major oil discoveries of recent years. Negative factors include the great water depth of some of them, and heavy, viscous oil which will be difficult to produce in some areas.

As most of the December 1983 issue of PETROLEUM

TABLE 1. Some important recent offshore oil and gas discoveries

Country and water body	Operator	Well no.	Block	Pay zone depth, ft	Pay zone or formation	Water depth, ft or remarks
U.S. Gulf of Mexico	Corpus Christi Oil & Gas	3	State of Texas 833-S	10,600	Frio sand	About 25
U.S. Gulf of Mexico	Davis Oil	4	West Cameron 4	9,600 and 9,400	Miocene	10 – both zones tested gas
U.S. Gulf of Mexico	Tenneco Oil Exploration and Production	2	West Delta 27	8,500-9,000	Upper Miocene sands	35 – four pay zones
U.S. Gulf of Mexico	Gulf Oil	5	Vermilion 24	17,400	Tertiary	25 – had 500 ft net pay, rich condensate
U.S. Gulf of Mexico	Gulf Oil	A-1	Brazos A-40	Below 16,000	–	145 – some condensate, H_2S, and CO_2 in gas
U.S. Gulf of Mexico	Amoco	B-3	Matagorda Island 623	10,000-10,260	Tertiary	70 – multiple-platform field
U.S. Gulf of Mexico	Texaco U.S.A.	106	South Marsh Island 299, Amber North well	11,520-11,540	Miocene sand	20 – extends SMI Block 236 field
U.S. Gulf of Mexico	Texaco U.S.A.	1	West Cameron Block 202, Olivine well	10,716-10,736	Miocene sand	60
U.S. Gulf of Mexico	Texaco U.S.A.	8	Vermilion 31, Starfak well	14,295-14,350	Miocene sand	15
U.S. Gulf of Mexico	Texaco U.S.A.	A-2	South Timbalier 200, Platinum well	12,500-14,000	Tertiary	130 – probable 152 ft of gas sand, 7 zones
Ireland Celtic Sea	Gulf Oil (Ireland) Ltd.	2	49/9	Moderate depth	–	3 oil zones, 1 gas zone; oil is 44° API
UK North Sea	Superior Oil (UK) Ltd.	3	22/5b	–	–	2 gas-condensate zones; TD 14,004 ft
Ras Al Khaimah Arabian Gulf	Gulf Offshore Ras Al Khaimah Ltd.	1X	Saleh	14,500-14,800	Middle Cretaceous limestone	320 – net pay of 190 ft est.
Indonesia South China-Java Sea	Natomas	3	Karmila	–	–	Multiwell platform, 111 ft probable net oil pay
China South China Sea	ARCO China Inc.	13-1-1	Yacheng	Below 12,000	Lower Tertiary sandstone	293

ENGINEER INTERNATIONAL was devoted to the U.S. West Coast, this subject is being dealt with lightly in this article.

New technology is expected to develop from a need to produce such heavy crudes as were reported by Conoco about 5 miles south of the Point Arguello field discovery well. The newer test yielded about 2,100 bbl of oil from four Monterrey formation zones, but was considered noncommercial with today's technology.

A few big rigs were reportedly scheduled for far northern areas of Alaska and Canada at year-end 1983. Beaudril, a subsidiary of Gulf Canada, was negotiating to use Sohio's movable island structure Molikpaq (also called "Big Mac"). The final part of Gulf Canada's $675 million (Canadian) drilling system for Beaufort Sea use was being completed in Japan for the 1984 drilling season. Offshore Data Services looked for the rig to spud or drill one hole in the Beaufort Sea, then move to Sohio acreage west of the Prudhoe Bay offshore area.

However, Texaco may suspend ice road and gravel island operations because of the Mukluk well's discouraging findings. Texaco had planned to spud its first Diapir Basin wildcat during the spring of 1984. Exxon Co. U.S.A. still is expected to drill its Diapir Basin wildcat this year from a concrete island drilling system.

TABLE 2. Gulf of Mexico lease acreage, in 5-year terms*

	Water depth, ft		
	0-150	**151-300**	**Over 300**
January 1983*	2,791,532	1,348,940	935,305
May 1983	1,379,538	670,658	1,068,977
August 1983	1,254,646	354,260	696,909
Total 1983 leases*	2,634,184	1,024,918	1,765,886
Grand total*	5,425,716	2,373,858	2,701,191
Increase, %	48.5	43	65
Rigs required	87	38	43

*Acreage figures are slightly exaggerated, because there have been some relinquishments of pre-1983 leases that are not shown. This table refers to exploratory drilling only, and excludes development drilling. *Source: Offshore Data Services Inc., Houston, Tex.*

TABLE 3. Offshore rig count as of mid-December 1983*

Idle rigs	**As of Dec. 12, 1983**	**Previous week**	**As of Nov. 14, 1983**	**As of Dec. 14, 1982**
U.S. Gulf of Mexico (Total rigs 223)	42	51	63	45
Utilization rate, %	83	77	71	78
European/ Mediterranean (Total rigs 124)	21	22	16	20
Utilization rate, %	83	82	87	82
Worldwide (Total rigs 717)	146	158	171	99
Utilization rate, %	80	78	76	85

*Adapted from Offshore Data Services Inc., Houston, Texas

Western Europe

Oil and gas discoveries continue to be made almost daily in the North Sea. The Celtic Sea (offshore Ireland) oil and gas discovery made by Gulf (Table 1) is a welcome surprise to some who believed that this area would be primarily a gas province. Exploration and development in the UK sector are enhanced by new, favorable tax provisions.

In Norway, large gas reserves have been enhanced by data indicating that Steipner field has more than 43 tcf and 100 million bbl of condensate in proven reserves. The major Troll gas field now has a development plan (see PEI, August 1983, p. 26). This field lies in about 1,000 ft of water. When production begins, probably about 1995, it will likely represent the largest industrial project in Norway's history.

Development in many fields is proceeding, notably at Beryl, Hutton, Maureen, and Leman. A typical recent discovery was Superior Oil (UK) Ltd.'s third well on Block 22/5b which tested rich gas condensate in two zones (see PEI, October 1983, p. 100).

Recent discoveries and developments in The Netherlands may enhance 1984 activity there. Also, there is strong interest in Denmark's offshore lands, now that the Gulf-Moller concession has been largely turned back to the state. There is much interest in the Baltic Sea and in such little explored bodies of water as the various Danish straits connecting the Baltic and North seas.

Operators are watching for developments in relatively deep Mediterranean waters offshore Spain and France. Italy's AGIP Mineraria, like so many national oil companies in difficult financial condition, is trying to entice private firms to explore for oil offshore Sicily. Both Italy and Yugoslavia continue their interest in Adriatic Sea prospects.

Africa and the Middle East

In Africa, Pennzoil Co. announced its offshore Tunisian permit on November 22, and its new interest in Gabon on July 19. Pennzoil Tunisia Inc. has a 90%

TABLE 4. Recent exploration and development plans for the Gulf of Mexico filed with Minerals Management Service as of mid-December 1983*

Company	**No. of wells**	**Block**	**Approximate water depth, ft**	**Estimated start-up**
McMoran	6	High Island A-448	250	Dec. 15, 1983
Conoco	3	Green Canyon 184	1,100-1,740	July 1984
Mark Production	6	West Cameron 588	236	May 1984
Pennzoil	1	East Cameron 270	177	December 1983
Odeco	3	South Timbalier 85	97	July 1984
Shell	5	South Marsh Island 130-131	230	Jan. 10, 1984
Odeco	3	South Timbalier 64	97	Dec. 15, 1983
Shell	1	North Padre Island 969	175	Dec. 8, 1983
Conoco	3	Ship Shoal 145	50	December 1983
Superior	5	West Cameron 72, 73	37	Dec. 10, 1983
Conoco	3	Green Canyon 141	1,425-1,650	Feb. 1, 1984
Gulf Oil	2	Mississippi Canyon 25	1,100-1,200	Jan. 1, 1984
Marathon	10	South Timbalier 280	about 300	December 1983
Seagull Energy	2	Eugene Island 45	23	December 1983
Gulf Oil	4	Viosca Knoll 986	800-900	December 1983
Gulf Oil	4	Mississippi Canyon 24	1,000-1,100	Jan. 1, 1984
Amoco	2	High Island A-12	60	Dec. 15, 1983

*Adapted from Offshore Data Services Inc., Houston, Texas working interest in a 250-sq-mile permit in the Gulf of Gabes, with Rutherford Tunisia holding 10%. Pennzoil is the operator. Enterprise Tunisienne d'Activites Petrolieres (ETAP), the Tunisian government firm, may obtain up to to 57.5% interest in production by sharing costs. Pennzoil expects to drill three wells in 3 years.

TABLE 5. Water depth records*

Year	Rig	Operator	Location	Water depth, ft
1975	Sedco 445	Shell	Gabon	2,295
1976	D-534	Esso	Thailand	2,639
	D-534	Esso	Thailand	2,957
	D-534	Esso	Thailand	3,461
1978	D-7 Seas	Getty	Congo	4,346
1979	D-7 Seas	Getty	Spain	4,441
	D-7 Seas	Texaco	Canada	4,876
1982	D-7 Seas	Elf/Total	France	5,624
1983	D-7 Seas	Shell	U.S.A.	6,448

*Data prepared by Sonat Offshore Drilling Inc., Houston, Tex.

Offshore Gabon, Pennzoil is in partnership with AGIP and several other firms. The 350,000-acre Tassi Marin II block is located in the Atlantic Ocean, 40 miles south of the nearest production, in water depths of 175 to 600 ft. Burmah Oil also spudded its first Gabon well late in 1983 – the Longhi Marine 1, located about 25 miles south of Port Gentil.

In Angola, the government is reportedly pushing to develop offshore resources rapidly this year. In Egypt, some new shallow oil discoveries have been reported in the Gulf of Suez area. West African drilling generally was at a moderate pace at year-end 1983.

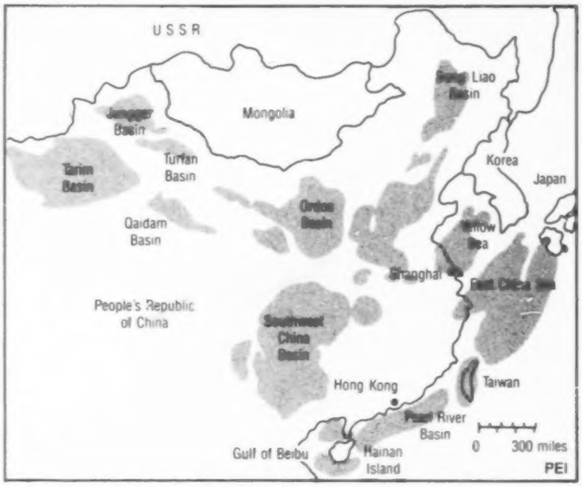
The same is true in the Middle East, where there is considerable interest in developing gas reserves, largely as a base for industrial development. Some huge international gathering and distribution systems are being discussed among Middle Eastern government chief along the entire western side of the Arabian Gulf.

Far East and Oceania

Drilling for India's Oil & Natural Gas Commission (ONGC) along with Bombay High continued late last year, mainly with jackups drilling in up to 250 ft of water. Interest remains high in the South China Sea-Java Sea plays offshore Thailand and Singapore.

Offshore Indonesia, Natomas Co. made a promising discovery at Karmila, located in the Southeast Sumatra contract area. The discovery well, Karmila-1, flowed 8,870 b/d (see PEI, August 1983, p. 26). On Oct. 28, 1983, Pennzoil Co. announced its one-third partnership in a 5,400-sq-mile Java Sea oil and gas contract in Indonesia. The other partners are Hudbay Oil International Ltd. and Husky Oil (Madura) Ltd., with the Canadian firm, Hudbay, as operator.

Offshore Australia, an important play is underway off the northwest coast. Mesozoic pays are being found in highly faulted reservoirs. The structures are evidently large and complicated. Exploration and development continue in the Barrow Island area of western Australia. In the Bass Strait, the Elf partners reportedly are chartering the semisubmersible Diamond M Epoch to spud a wildcat early in 1984.



China's sedimentary basins are mainly nonmarine, with the exceptions of the Tarim and Southwest China basins. Much of China's oil has been high paraffin, high pour point crude. If economic discoveries are made, high technology will be required to recover such crudes. Some of China's sedimentary basins lie partly onshore and partly offshore. So far, most of the contract areas lie in the Pearl River Basin.

Perhaps the most interesting Far East play is offshore China. ARCO already has an offshore gas discovery (Table 1). China wants to double its current 2-million-b/d oil production by the year 2000. China knows that it must have help from outside sources to achieve this goal.

From 1979 to 1981, 46 oil companies from 13 countries evaluated potential of more than 100 million acres of China's offshore areas. Of the original firms in 1982, 33 submitted 102 competitive bids on the 43 Chinese-selected contract areas. Late in 1983, 18 contract areas were awarded to groups involving 27 firms from nine different nations.

There are hundreds of prospects offshore in several different sedimentary basins. If oil is found, the Chinese market is difficult to understate. For one thing, the market for anhydrous ammonia fertilizers, which might be manufactured from natural gas, seems almost unlimited. As in all communist countries, distribution to consumers is the main bottleneck.

If found offshore, Chinese oil will likely be viscous, high pour point oil, as even the offshore basins are believed to be nonmarine, yielding high paraffin crudes. Crude oil reserves to be found offshore China are estimated from 20 to 50 billion bbl. Areas of interest are shown on the accompanying map.

Acknowledgement. The author thanks the many individuals who assisted preparation of this article, particularly Loran Sheffer and Linda Gillan of Offshore Data Services Inc., Houston, Tex., the source of most statistical data in this article.

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ATLANTIC DRILLING CO LTD 33 St Mary's St Edinburgh EH1 1TN Scotland 031 -557-2323
ATLANTIC PACIFIC MARINE CORP 2425 Fountain View Dr Ste 300 Houston TX 77057 713-783-0910
ATWOOD OCEANICS PACIFIC LTD 15835 Park Ten Place Dr PO Box 218350 Houston TX 77218 713-492-2929
BAWDEN DRILLING (UK) LTD Farburn Industrial Estate Dyce Aberdeen Scotland 44 (224) 724399
BAY DRILLING CORP PO Box 2316 Houma LA 70361 504-872-4888
BLOCKER DRILLING & MARINE CO US Hwy 90 E PO Box 53596 Lafayette LA 70505 318-269-0730
BOKENKAMP DRILLING CO 31[illegible] Briarpark Dr Ste 1050 Houston TX 77042 713-789-0555
BOOKER DRILLING CO PO Box 7244 Metairie LA 70010 504-833-2876
BROUGHTON DRILLING CO 921 Main St Ste 1410 Houston TX 77002 713-759-1844

CACTUS INTL INC 13747 Monfort Dr Ste 300 Dallas TX 75240 214-934-3333 Telex 794477
CANADIAN MARINE DRILLING LTD PO Box 6800-Postal Station D Calgary AB T2P 0N1 Canada 403-260-5100
CANMAR INTL PO Box 6800-Postal Station D Calgary AB T2P 0N1 Canada 403-260-5100
CHALLENGER DRILLING INC 2515 Kelly Ln Houston TX 77066 713-893-9755
CHILES DRILLING CO 1900 West Loop South Ste 1400 Houston TX 77027 713-621-4991
CLIFFS DRILLING CO Two Allen Center Ste 3150 1200 Smith St Houston TX 77002 713-651-9426
COSIFOR 90 Avenue des Ternes 75017 Paris France (1) 574 35 79
CRC MALLARD WELL PO Drawer 51498 OCS Lafayette LA 70505 318-233-4922
DEUTSCHE TIEFBOHR AG Deilmannstrasse 1 PO Box 75 4444 Bad Bentheim West Germany (Phone) 5922/72-0
DIAMOND M CO PO Box 4558 Houston TX 77210 713-490-5300
DIXILYN-FIELD DRILLING CO PO Box 4251 Houston TX 77210 713-877-8850
DOLPHIN TITAN INTL INC 333 Clay St Ste 2600 Houston TX 77002 713-659-2381
DUAL DRILLING CO 600 City Natl Bank Bldg PO [illegible] Wichita Falls TX 76307 817-723-2127
DYVI OFFSHORE A/S PO Box 454 Sentrum Oslo 1 Norway (02) 410100

EGYPTIAN DRILLING CO PO Box 71 Nasr City Cairo Egypt 600-230 (927) 92667 EDRLG UN
FLUOR DRILLING SERVICES INC 144 Elk Pl #1010 New Orleans LA 70112 504-581-5333
FORAMER 16 Bis Rue Grange Dame Rose 78143 Velizy Villacoublay France (3) 946.97.17
FOREX NEPTUNE AND/OR AFFILIATES 50 Ave Jean-Jaures BP 599 92542 Montrouge Cedex France 657.11.07

GLENDEL DRILLING CO 2761 Old Erath Rd PO Box 765 Abbeville LA 70510 318-898-1637
GLOBAL MARINE DRILLING CO PO Box 4379 550 Westlake Park Blvd Houston TX 77210 713-496-8000
GOLAR-NOR OFFSHORE A/S 103 New Oxford St London WC 1A 1DQ England 01 836 9545
GOLDRUS MARINE DRILLING CO PO Box 4394 Houston TX 77210 713-759-6337
GREAT EASTERN DRILLING & ENGINEERING CO 1904 Shaw Centre 1-Scotts Rd Singapore 0922 7377633
GRIFFIN-ALEXANDER DRILLING CO 13430 Northwest Fwy Ste 100 Houston TX 77040 713-460-1804

HARRIS WELL SERV INC PO Drawer 949 Eunice LA 70535 318-457-3376
HELMERICH & PAYNE INTL DRILLING CO Utica at 21st St Tulsa OK 74104 918-742-5531
HOULDER MARINE DRILLING LTD 53 Leadenhall St London EC3A 2BR England (01) 481-2020
HOUSTON OFFSHORE INTL INC One West Loop South Ste 804 Houston TX 77027 713-629-1400
HOUTECH DRILLING 10701 Corporate Dr Ste 230 Stafford TX 77477 713-494-5151
HUTHNANCE DRILLING CO 601 Jefferson Houston TX 77002 713-659-4816

INTERNATIONAL CHANDLERS 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
INTEROCEAN DRILLING SA PO Box 2765 Houston TX 77001 713-871-7500
JAPAN DRILLING CO LTD No 11 Mori Bldg 6-4 Toranomon 2-chome Minatoku Tokyo Japan 501-7391
JEBSENS OFFSHORE DRILLING LTD Greenbank Rd East Tullos Aberdeen AB1 4BQ Scotland (0024) 878218 ext 25
JFP WELL SERVICE INC 14425 Torrey Chase Blvd Ste 300 Houston TX 77014 713-893-4464
J L OFFSHORE DRILLING INC 10575 Katy Fwy Ste 260 Houston TX 77024 713-492-2888

KCA DRILLING LTD KCA House 227 Shepherds Bush Rd London W6 7AS England 01-741 4811
KEYDRIL CO 2000 Capital Bank Plaza 333 Clay St Houston TX 77002 713-754-3769
KEYES OFFSHORE INC 1250 Shoreline Dr Ste 300 PO Drawer 7 Sugarland TX 77478 713-491-2002
KINGSNORTH MARINE DRILLING LTD 53 Leadenhall St London EC3A 2BR England 01-481-2020 (851) 884801
LOFFLAND BROS CO PO Box 2847 Tulsa OK 74101 918-622-9330
MAERSK DRILLING Esplanaden 50 DK-1098 Copenhagen Denmark 45-1-14-15-14 (855) 16201 MDrill DK
MAP DRILLING CO 416 Oil & Gas Bldg New Orleans LA 70112 504-524-6282
MARINE DRILLING CO 900 CCNB Center South Corpus Christi TX 78411 512-884-8851
MARINE DRILLING SA 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
MARLIN DRILLING CO 1333 West Loop South Ste 780 Houston TX 77027-9178 713-627-1161
MAYRONNE CO Div Mayronne Enterprises Inc PO Box 432 Harvey LA 70059 504-368-5911
MGF DRILLING CO 2626 Richmond Ave Ste B Houston TX 77098 713-526-7236
MONTREAL ENGENHARIA S/A Rua Sao Jose 90/4 And Rio de Janeiro-RJ-Brazil 20013 (021) 224-8999
MORCO A/S PO Box 65 N-4056 Tananger Norway 04-696766
NATIONAL DRILLING CO PO Box 4017 Abu Dhabi UAE 820330 (958) 22553 EM NADRIL
NICKLOS DRILLING CO 5200 Interfirst Plaza Houston TX 77022 713-658-8245
NOBLE DRILLING CORP 1924 S Utica Ste 600 Tulsa OK 74104 918-749-9901
NORDRILL INTL INC 7670 Woodway Ste 150 Houston TX 77063 713-974-0000
OCEAN DRILLING & EXPL CO PO Box 61780 New Orleans LA 70161 504-561-2248
OCEAN DRILLING SERVICES INC 1901 N Akard Dallas TX 75201 214-653-8700
ODEBRECHT PERFURACOES LTDA Rua da Gloria 290 - 10 andar CEP 20241-Rio de Janeiro RJ-Brazil (021) 221-0860 221-2108 231-0995 (391) 792225 Odei BR
ODFJELL DRILLING & CONSULTING CO A/S Kokstadflaten 5 PO Box 33 N-5061 Kokstad Norway 05-22 77 80 Telex: 42634 odccn/40507 odbas (856)

PACNORSE DRILLING CORP PO Box 1401 Orange CA 92668 915-367-4181
PENROD DRILLING CO 2200 Thanksgiving Tower Dallas TX 75202 214-880-1700
PHOENIX MANAGEMENT CORP 2925 Briarpark 5th Floor Houston TX 77042 713-784-2420
PLATFORM WELL SERV INC PO Box 52836 Lafayette LA 70505 318-237-5555
POOL OFFSHORE SERVICE 298 Prospect St PO Box 2166 Houma LA 70361 504-868-1430
QUARLES DRILLING CORP 1503 Engineers Rd Belle Chasse LA 70037 504-392-4191
READING & BATES DRILLING CO 90[illegible] Threadneedle Ste 200 PO Box 79627 Houston TX 77279 713-496-5000
REBSTOCK DRILLING CO 2601 Lexington Ave Kenner LA 70062 504-467-1321
RICHTER DRILLING PTY LTD GPO Box 2197 Brisbane Qld 4000 Australia (07) 229-2544 Telex AA40352 (790)
RIO COLORADO S A Sarmiento 663 7th Floor Buenos Aires Argentina (390) 18930
RIO GRANDE DRILLING CO 2300 Tower Life Bldg San Antonio TX 78205 512-224-4572
ROSS DRILLING CO PO Box 265 3201 Sandefjord Norway 34-63481
ROWAN COMPANIES INC-US 5051 Westheimer 1900 Post Oak Tower Houston TX 77056 713-621-7800
ROWAN INTL INC 5051 Westheimer 1900 Post Oak Tower Houston TX 77056 713-621-7800

SAIPEM SpA 20097 S Donato Milanese PO Box 12072 - 20120 Milano (Milano) Italy (02) 520 9953 Telex 310246 ENI-SAIPEM
SALEN PROTEXA DRILLING CO 580 Westlake Park Blvd Ste 600 Houston TX 70079 713-496-7770
SANDERS DRILLING CO PO Box 1086 New Iberia LA 70560 318-364-1537
SANTA FE DRILLING CO 505 S Main St PO Box 1401 Orange CA 92668 714-558-1300
SAVAGE DRILLING INC 9525 Katy Fwy #309 Houston TX 77024 713-932-7299
SEA DRILLING NETHERLANDS 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
SEDCO DUBAI LTD See Ocean Drilling Services Inc
SEDCO INC 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
SEDCO INTERNATIONAL SA 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
SEDCO MARITIME INC 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
SEDCO-UNDERSEAS DRILLING LTD 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
SERVICE EQUIPMENT & ENGINEERING INC 900 Dunn St Houma LA 70360 504-868-9010
DEAN SHANK DRILLING CO 2908 Engineers Rd Belle Chasse LA 70037 504-392-1685
SKINNER MARINE OPERATIONS LTD PO Box 46 San Fernando Trinidad West Indies 65-77265
A/S SMEDVIG DRILLING CO PO Box 110 4001 Stavanger Norway (04) 5-20040

SOMAD (SODINT MARINE DRILLING CO) c/o Saipem SpA 20097 S Donato Milanese PO Box 12072 - 20120 Milano (Milano) Italy (02) 520 9953 Telex 310246 ENI-SAIPEM
SONAT OFFSHORE DRILLING INC GROUP PO Box 2765 Houston TX 77001 713-871-7500
SOUTH SEAS DRILLING CO PO Box 1401 Orange CA 92668 714-558-1300
SOUTHEASTERN DRILLING SERVICE INC 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
SOUTHEASTERN OCEAN DRILLING CO SA 1901 N Akard Cumberland Hill Dallas TX 75201 214-653-8700
TELEDYNE MOVIBLE OFFSHORE INC PO Box 31936 Lafayette LA 70503 318-981-7100
TEMPLE DRILLING CO 3300 Capital Bank Plaza Houston TX 77002 713-759-0960
TRANSOCEAN DRILLING CO LTD PO Box 25861 Oklahoma City OK 73125 405-270-2804
TRANSWORLD DRILLING CO PO Box 25861 Oklahoma City OK 73125 405-270-2804
TRIANGLE DRILLING LTD Rua da Gloria 290 - 10 20241 Rio de Janeiro - RJ Brazil (021) 221-0860
TROPIC DRILLING CO 17150 Butte Creek Rd Ste 200 Houston TX 77090 713-444-3970
TWO R DRILLING CO PO Box 1968 Houma LA 70361 504-876-6987

UNDERWATER GAS DEVELOPERS LTD PO Box 428 Port Colborne ON L3K 1B7 Canada 416-894-1731
WELL SERVICES LTD PO Box 152 San Fernando Trinidad West Indies 649-7531
WESTERN OCEANIC INC 515 S Post Oak Rd PO Box 56006—77256 Houston TX 77027 713-629-2726
WESTERN OFFSHORE DRILLING AND EXPLORATION CO 3333 Michelson Dr Irvine CA 92730 714-975-7034
WILH WILHELMSEN Roald Amundsens Gate 5 Oslo 1 Norway

ZAPATA OFFSHORE CO Zapata Tower PO Box 4240 Houston TX 77210 512-226-6497

Petroleum Engineer INTERNATIONAL

International Contract Offshore Drilling Rigs

AFRICA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
UNDESIGNATED							
Blocker Drlg & Marine/Vermilion Bay	B	13 63	10		300		Stacked
ANGOLA							
Dyvi Offshore AS/Dyvi Gamma	JU	13 63	10	Nat 1320UE	200	350	Drilling
Global Marine Drlg/Glomar Adriatic I	JU	13 63	10	Nat 1625DE	250	300	Drilling
Reading & Bates/Douglas Carver	DS	20 00	10	Nat 1625DE	250	750	Contracted
Sedco Inc/Sedco 135G	SS	13 63	10	Olwl E3000	250	800	Drilling
Sedco Inc/Sedneth Luanda	JU	13 63	10	Nat 1320UE	200	200	Drilling
CABINDA							
Keydril/Key Largo	JU	13 63	10	Olwl E300	300	300	Drilling
Sedco Inc/Sedco 150	JU	13 63	5	C-E A800RE	100	150	Drilling
Sedco Inc/Sedco 251	JU	13 63	10	C-E C2	200	250	Drilling
CAMEROON							
Cosifor/Navifor I	T	16 75	5	Nat 1320UE	200	350	Drilling
Cosifor/Navifor II	T	13 63	5	Nat 1320UE	200	400	Stacked
Diamond M/Barge 44	BP	13 63	5	Olwl E3000	250	18	Stacked
Diamond M/Diamond M Don E McMahon	JU	13 63	10	Olwl E2000	250	100	Stacked
Foramer/Ile d'Ouessant	T	10 00	5	Idco H525	80	360	Stacked
Foramer/Ile de la Reunion	T	13 63	5	Nat 110DE	160	250	Drilling
Forex Neptune and/or Affil/Searex 2	T	11 00	10	G-D 500E	110	350	Drilling
Forex Neptune and/or Affil/Trident 7A	JU	13 63	10	G-D 1500E	217	132	En Route
Western Oceanic/Western Polaris I	JU	13 63	10	Nat 1320UE	200	250	Drilling
Western Oceanic/Western Polaris II	JU	13 63	10	Nat 1320UE	200	250	Drilling
CONGO							
Cosifor/Navifor III	T	16 75	5	Nat 1320UE	200	400	Drilling
Cosifor/Navifor Norse	DS	16 53	10	Nat 1320UE	200	600	Drilling
Foramer/Barracuda	T	16 75	5	Nat 1320DE	200	400	Drilling
Foramer/Ile de Re	T	16 75	5	Nat 1320DE	200	300	Stacked
Foramer/Ile de Sein	T	16 75	5	Nat 1320DE	200	400	Drilling
Forex Neptune and/or Affil/Trident IX	JU	13 63	10	G-D 1500E	217	400	Drilling
EGYPT							
Chiles Drlg/Texas Star	JU	13 63	10	Nat 110UE	160	150	Drilling
Dixilyn-Field Drlg/82	JU	13 63	10	Nat 1320UE	200	250	Drilling
Egyptian Drlg/EDC Rig 22	P	13 63	5	C-E WS1B	170		Drilling
Egyptian Drlg/4				Nat 110	130		Drilling
Foramer/Ile d'Amsterdam	JU	13 63	10	Nat 1320UE	200	300	Drilling
Forex Neptune and/or Affil/Trident 6	JU	13 63	10	G-D 1500E	217	300	Drilling
Global Marine Drlg/Glomar Adriatic VIII	JU	13 63	10	Nat 1625DE	250	300	Drilling
Global Marine Drlg/Glomar High Island II	JU	13 63	10	Nat 1320UE	200	250	Drilling
Interocean Drlg SA/Interocean III	JU	13 63	10	Nat 1320UE	200	307	Drilling
Japan Drlg/Hakuryu I	JU	13 63	5	Niigata NM4000	135	110	Drilling
Maersk Drlg/Maersk Viking	JU	13 63		Olwl E2000	200	300	Drilling
Ocean Drlg & Expl/Ben Ocean Typhoon	DS	13 63	5	Nat 1320UE	250	600	Drilling
Ocean Drlg & Expl/Ocean Tide	JU	13 63	10	Nat 1320DE	250	250	Drilling
Penrod Drlg/95	JU	13 63	10	Nat 1320UE	250	250	Drilling
Reading & Bates/E W Thornton	DS	20 00	5	Olwl E3000	255	600	Stacked
Reading & Bates/Roger W Mowell	JU	13 63	10	Nat 1625DE	250	300	Contracted
Reading & Bates/W B Tyson	JU	13 63	10	Nat 1625DE	250	300	Contracted
Saipem/5834	P	14 00	5	Idco E2100	200		Drilling
Saipem AG/Texas Star	JU	13 63	5	Nat 110UE	160	150	Drilling
Santa Fe Drlg/Rig 105	JU	21 25	5	C-E C2	200	250	Drilling
Santa Fe Drlg/Santa Fe Mariner I	SS	16 75	5	Nat 1320UE	200	600	Drilling
Santa Fe Drlg/136	JU	13 63	10	Nat 1320UE	200	250	Drilling
Santa Fe Drlg/141	JU	13 63	10	Olwl E2000	200	250	Drilling
Sonat Offshore Drlg Inc Group/Discover 1/Rig 22	T	12 00	3	Nat 80B	120	600	Drilling
Sonat Offshore Drlg Inc Group/Offshore Aquarius	JU	13 63	5	Olwl E2000	200	250	Drilling
Sonat Offshore Drlg Inc Group/Offshore Comet	JU	13 63	10	Nat 1320UE	200	225	Drilling
Sonat Offshore Drlg Inc Group/Offshore Taurus	JU	13 63	10	MC U1220BE	200	250	Drilling
Western Oceanic/Western Triton I	JU	13 63	10	Nat 1320UE	200	250	Drilling
EQUATORIAL GUINEA							
Foramer/Asterie	SS	18 75	10	G-D 2100DE	250	800	Drilling
GABON							
Dixilyn-Field Drlg/83	JU	13 53	10	Nat 1320UE	200	250	Stacked
Foramer/Ile de la Martinique	T	16 75	5	Nat 1320DE	200	360	Stacked
Forex Neptune and/or Affil/Searex I	T	16 75	5	G-D 1100E	180	200	Drilling
Forex Neptune and/or Affil/Trident IV-A	JU	13 63	10	G-D 2100E	254	300	Drilling
Global Marine Drlg/Glomar Adriatic II	JU	13 63	10	Nat 1625DE	250	300	Drilling
Global Marine Drlg/Glomar High Island III	JU	13 63	10	Nat 1320UE	200	250	Drilling
Global Marine Drlg/Glomar Main Pass I	JU	13 63	10	Nat 1625DE	250	300	Drilling
Keydril/Key Gibraltar	JU	13 63	10	Olwl E2000	250	300	Drilling
Ocean Drlg & Expl/Ocean Ruler	JU	13 63	5	Nat 1625E	250	250	Stacked
Transworld Drlg/46	S	13 63	5	C-E DA460	200	70	Stacked
IVORY COAST							
J L Offshore/Dan Duke	JU	13 63	10	Nat 1320UE	200	300	Drilling
J L Offshore/Dan King	JU	13 63	10	Nat 1320UE	200	205	Drilling
Odfjell Drlg & Consulting/Amazone	JU						Drilling
Saipem/Saipem Due	DS	16 75	5	Nat 1625	250	1000	Drilling
Southeastern Drlg Serv/Sedco J	SS	21 25	2	Olwl E3000	250	800	Drilling
LIBYA							
Saipem/Scarabeo 3	SS	18 75	10	Nat 1625	250	1300	Drilling
Somad-Sodint Marine Drlg/Perro Negro 3	JU	13 58	10	Idco E2100	210	300	En Route

AFRICA (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
NIGERIA							
Atwood Oceanics Pacific/Richmond	S	13 63	10	Nat 1320UE	200/5"	70	Stacked
Diamond M/Barge 45	BP	13 63	10	Olwl E3000	250	18	Drilling
Forex Neptune and/or Affil/Belle Isle	B	13 63	5	C-E 1500UE	217	22	Drilling
Forex Neptune and/or Affil/Lutece	B	13 63	5	Idco 2500E	254	22	Contracted
Forex Neptune and/or Affil/Trident 8	JU	13 63	10	G-D 1500E	217	300	Contracted
Keydril/Key Bermuda	JU	13 63	10	Olwl 2000	200	200	Drilling
Reading & Bates/F G McClintock	JU	20 00	10	Olwl E3000	250	300	Contracted
Santa Fe Drlg/Swamp Master R-74	B	13 63	5	Idco 2500E	200	22	Stacked
Santa Fe Drlg/Swamp Queen R-84	B	20 00	5	Nat 1320	200	22	Stacked
Sedco Inc/Sedco 252	JU	13 63	10	Olwl E2000	200	250	Drilling
Sedco Inc/Sedco 253	JU	13 63	10	C-E C2	200	250	Drilling
Western Offshore Drlg & Expl/Mr Sage	JU	13 63	5	Nat 1320UE	200	200	Drilling
SENEGAL							
Santa Fe Drlg/Calabar Queen Rig 83	T	20 00	5	Idco E1200	120		Stacked
SOUTH AFRICA							
Sedco Maritime/Sedco K	SS	21 25	10	Olwl E3000	250	900	Drilling
TUNISIA							
Global Marine Drlg/Glomar High Island VIII	JU	13 63	10	Nat 1320UE	200	250	Drilling
Keydril/Galveston Key	JU	13 63	10	C-E C3	300	300	Stacked
Ocean Drlg & Expl/Ocean Voyager	SS	13 63	5	C-E C3 Type II	250	1200	Drilling
Sedco Inc/Sedco H	SS	18 75	10	Olwl 3000	250	800	Drilling
ZAIRE							
Keydril/Key Victoria	JU	13 63	5	Olwl E2000	250	264	Drilling

ASIA PACIFIC

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
AUSTRALIA							
Atwood Oceanics Pacific/Energy Searcher	DS	18 75	10	G-D 3000E	250/5"	1500	Drilling
Atwood Oceanics Pacific/Regional Endeavour	DS	18 75	10	Nat 1320UE	200/5"	1500	Drilling
Diamond M/Epoch	SS	16 75	10	Olwl E3000	300	1200	Drilling
Global Marine Drlg/Glomar Main Pass III	JU	13 63	10	Nat 1625DE	250	300	Drilling
Loffland Bros/95	P	13 63	5	MC U1220	200		Drilling
Maersk Drlg/Maersk Valiant	JU	13 63		Olwl E2000	200	300	Drilling
Ocean Drlg & Expl/Ocean Digger	SS	18 75	10	C-E A1500	250	600	Stacked
Richter Drlg Pty/10	P	13 63	5	Nat 110UE	160		Drilling
Richter Drlg Pty/12	P	13 63	5	Nat 110UE	160		Drilling
South Seas Drlg/Southern Cross	SS	18 75	10	Olwl E2000	200	1500	Drilling
BRUNEI							
Reading & Bates/Harvey H Ward	JU	13 63	10	Nat 1625	250	300	Contracted
Reading & Bates/I J Pierce	PT	20 00	5	Olwl 840E	180		Contracted
Reading & Bates/J W Nickle	PT	20 00	5	Olwl 840E	180		Contracted
Sedco Inc/Sedco 135-E	SS	20 00		Olwl 3000	250	600	Drilling
Southeastern Ocean Drlg/Sedco 135-A	SS	13 63	5	Olwl 3000	250	600	Drilling
BURMA							
Forex Neptune and/or Affil/Trident 1	JU	13 63	10	G-D 1500UE	217	287	Drilling
INDIA							
Atwood Oceanics Pacific/Gettysburg	B	18 75	10	Nat 1320	200/5"	600	Drilling
Atwood Oceanics Pacific/Shenandoah	JU	13 63	10	C-E C2	200/5"	300	Stacked
Dixilyn-Field Drlg/95	SS	18 75	10	Nat 1625DE	250	800	Drilling
Griffin-Alexander Drlg/G-A I	JU	13 63	10	MC EB1220	250	200	Drilling
Reading & Bates/J W Bates	DS	20 00	10	Nat 1320UE	200	600	Stacked
Reading & Bates/W T Adams	JU	13 63	10	Nat 1525E	250	300	Contracted
Sedco Intl SA/Sedco 445	DS	16 75	10	Olwl E3000	250	3000	Drilling
Western Oceanic/Western Triton II	JU	13 63	10	Nat 1320	200	250	Drilling
Zapata Offshore/Miss Kitty	JU	13 63	10	Nat 1625	250	300	Drilling
INDONESIA							
Atwood Oceanics Pacific/Chancellorsville	DS	18 75	10	C-E C2	200/5"	1000	Drilling
Atwood Oceanics Pacific/Margie	SS	18 75	10	Nat 1320	200/5"	600	Stacked
Atwood Oceanics Pacific/Mission Viking	B	18 75	10	Nat 1625DE	200/5"	700	Drilling
Dual Drlg/Rig 38	JU	13 63	5	Olwl E2000	200	300	Drilling
Dual Drlg/Rig 42	JU	13 63	5	Olwl E2000	200	300	Drilling
Foramer/Alligator	T	13 63	10	Nat 110UE	160/5"	450	Drilling
Forex Neptune and/or Affil/Gavrinis (Rig 37)	B	13 63	5	Nat 110UE	217	25	Drilling
Forex Neptune and/or Affil/Izenah (Rig 38)	B	13 63	5	Nat 110UE	217	25	Drilling
Global Marine Drlg/Glomar Conception	DS	18 75	10	Nat 1625DE	250	600	Drilling
Global Marine Drlg/Glomar Robert F Bauer	DS	18 75	10	Nat 1625DE	250	2500	Drilling
Japan Drlg/Hakuryu IV	JU	13 63	10	Nat 1625DE	250	295	Drilling
Penrod Drlg/84	JU	13 63	10	Nat 1320UE	25	250	Stacked
Penrod Drlg/93	JU	13 63	10	Nat 1320UE	250	250	Drilling
Penrod Drlg/94	JU	13 63	10	Nat 1320UE	25	250	Stacked
Reading & Bates/Chris Seger	JU	29 50	10	Idco 2500	200	210	Contracted
Reading & Bates/D K McIntosh	JU	30 00	10	Nat 1320	200	250	Contracted
Reading & Bates/Dickson M Saunders	JU	20 00	5	Nat 80B	150	160	Stacked

ASIA PACIFIC (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth, •	Status •
INDONESIA (Cont'd)							
Reading & Bates/J W McLean	JU	20.00	10	Nat 130	200	225	Contracted
Santa Fe Drlg/Santa Fe Explorer	JU	20.00	5	MC U914	150	160	Drilling
Santa Fe Drlg/124	JU	13.63	5	Nat 1625DE	200	250	Drilling
Santa Fe Drlg/127	JU	13.63	5	Nat 1320UE	200	250	Drilling
Santa Fe Drlg/134	JU	21.25	10	Nat 1320UE	200	250	Drilling
Sonat Offshore Drlg Inc Group/Discoverer 511	DS	18.75	10	Idco E2100	200	2000	Drilling
Transocean Drlg/Transocean No 7	JU	13.63	10	C-E C3 Type II	250	300	Drilling
Western Oceanic/Apollo 1	JU	13.63	10	C-E C3	200	300	Drilling
JAPAN							
Dyvi Offshore AS/Dyvi Stena	SS	18.75	15	C-E C3	250	200	Under Construction
Japan Drlg/Hakuryu II	SS	20.75	5	C-E C3 Type II	300	656	Drilling
Japan Drlg/Hakuryu V	SS	18.75	10	C-E C3 Type II	300	1640	Drilling
Japan Drlg/Hakuryu 9	JU	13.63	10	Nat 1320UE	200/ 5"	200	
JFP Well Serv/JFP Eleven	JU	13.38	10	Olwi E2000	300/ 5"	350	Under Repair
Keydril/Key Hawaii	JU	13.63	10	Nat 1625DE	250	300	Under Construction
KOREA							
Houlder Marine Drlg/High Seas Driller	SS	18.75	15	Nat 1625E	250/ 5"	1500	Under Construction
Reading & Bates/Jim Cunningham	SS	18.75	10	Nat 1625DE	250	1500	Stacked
Sedco Inc/Sedco-712	SS	18.75	15	Olwi E3000	250	1500	Under Construction
Sedco Inc/Sedco-714	SS	18.75	15	Olwi E3000	250	1500	Under Construction
MALAYSIA							
Dolphin Titan Intl/140	T	13.63	10	Nat 1320UE	200	225	Drilling
Foramer/Shiloh	T	16.75	5	Nat 1320DE	200	450	Drilling
Forex Neptune and/or Affil/Grand Large	T	13.63	5	G-D 1500UE	217	250	Drilling
Loffland Bros/46	P	13.63	5	MC U914CE	180		Stacked
Loffland Bros/47	P	13.63	5	MC U914	180		Drilling
Reading & Bates/D R Stewart	JU	13.63	10	Olwi E3000	250	300	Contracted
NEW ZEALAND							
Atlantic Drlg/Benreoch	SS	18.75	15	Nat 1625DE	250/ 5"	1500	Contracted
Penrod Drlg/78	S	13.63	10	Nat 1625E	250		Drilling
SINGAPORE							
Atlantic Drlg/Benlomond	DS	18.75	10	C-E C2	200/ 5"	750	Stacked
Dolphin Titan Intl/143	T	13.63	10	C-E A100E	200	150	Stacked
Global Marine Drlg/Glomar Grand Isle	DS	18.75	10	Nat 1625DE	250	600	Stacked
Houston Offshore Intl/Sabine V	JU	13.63	10	Nat 1320UE	200	200	Stacked
J L Offshore/Dan Queen	SS	18.75	10	Nat 1320UE	200	1000	Drilling
J L Offshore/Danwood Ice	DS	18.75	10	Nat 1320UE	200	1000	Drilling
Japan Drlg/Hakuryu III	SS	18.75	10	C-E C3 Type II	300	1000	Undesignated
JFP Well Serv/JFP Seven	JU	13.63	1	Olwi E2000	250/ 5"	300	Stacked
Ocean Drlg & Expl/Ocean Hurricane	DS	16.75	10	Nat 1625	250	600	Stacked
Ocean Drlg & Expl/Ocean Prospector	SS	18.75	10	C-E C3 Type II	250	1000	Stacked
Reading & Bates/Charley Graves	PT	20.00	10	Nat 1320UE	250		Stacked
Reading & Bates/W D Kent	P	13.63	5	Nat 1320UE	250		Stacked
Rowan Co/Rowan California	JU	13.63	10	Nat 1625	250	300	
Rowan Intl/Rowan Fairbanks	B	13.63	5	Nat 1320UE	250	20	Stacked
Rowan Intl/Rowan-Morgan City (Fxd Ht)	B	13.63	5	Nat 1320UE	250	20	Stacked
Sonat Offshore Drlg Inc Group/Discoverer III	DS	18.75	10	Nat 1625	200	600	Stacked
Transworld Drlg/71	JU	13.63	10	C-E C3 Type II	250	250	Stacked
Western Offshore Drlg & Expl/Western Offshore VII	B	16.75	5	G-D 2100RE	250	600	Stacked
Zapata Offshore/Enterprise (35)	JU			C-E C3 Type II			Stacked
Zapata Offshore/32	JU	13.63	10	Nat 1320	200	250	Stacked
TAIWAN							
Western Offshore Drlg & Expl/Western Offshore VIII	DS	16.75	5	Nat 1625DE	250	600	Drilling
THAILAND							
Great Eastern Drlg & Engrg/Eastern Princess	PT	13.63	5	C-E C2	200	400	Drilling
Great Eastern Drlg & Engrg/Eastern Queen	PT	13.63	5	C-E C2	200	400	Drilling
Great Eastern Drlg & Engrg/Seacrest	DS	18.75	10	Olwi E3000	250	1000	Drilling

CANADA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth, •	Status •
UNDESIGNATED							
Global Marine Drlg/Glomar High Island IX	JU	13.63	10	Nat 1320	200	250	Drilling
Global Marine Drlg/Glomar Labrador I	JU	13.63	15	Nat 1625DE	250	300	Drilling
Marine Drlg SA/Sedco 709	SS	16.75	10	Olwi E3000	250	6000	Drilling
Sedco Maritime/Sedco 706	SS	18.75	10	Olwi E3000	250	1300	Drilling
Sonat Offshore Drlg Inc Group/John Shaw	SS	18.75	10	C-E C3 Type II	250	1500	Drilling
NEWFOUNDLAND							
Smedvig Drlg/West Venture	SS	18.75	10	C-E 3C	250	1200	Drilling
Zapata Offshore/Zapata Ugland	SS	13.63	10	Olwi E3000	250	600	Drilling
NORTHWEST TERRITORIES							
Canadian Marine Drlg/Canmar Explorer I	DS	18.75	10	Idco 2100E	250/ 5"	600	Stacked
Canadian Marine Drlg/Canmar Explorer II	DS	18.75	10	Idco 2100E	250/ 5"	600	Stacked
Canadian Marine Drlg/Canmar Explorer III	DS	18.75	10	Nat 1625DE	250/ 5"	1500	Stacked

CANADA (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth, •	Status •
NORTHWEST TERRITORIES (Cont'd)							
Canadian Marine Drlg/Canmar Explorer IV	DS	18.75	10	C-E C3	200/ 5"	607	Stacked
Canadian Marine Drlg/CBIR #1	SS	20.75	3	C-E C3	250/ 5"	26	Stacked
Canadian Marine Drlg/CBIR #2	SS	20.75	3	Nat 1625DE	/5"	26	Drilling
NOVA SCOTIA							
Rowan Co/Rowan Juneaue	JU	13.63	15	Nat 1625	250	300	Drilling
ONTARIO							
Underwater Gas Dev/Mr Neil	JU	10.00	3	Idco H525D	80	80	Stacked
Underwater Gas Dev/Telesis	DS	8.00	2	Nat T20	50	210	Stacked
Underwater Gas Dev/Timesaver II	JU	8.00	2	C-E GB250	50	100	Stacked
SABLE ISLAND							
Zapata Offshore/31	JU	13.63	15	Nat 1625DE	250	200	Drilling

EUROPE

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth, •	Status •
UNDESIGNATED							
Wilh Wilhelmsen/Treasure Saga	SS						Under Construction
DENMARK							
Dyvi Offshore AS/Dyvi Beta	JU	13.63	10	Nat 1320UE	200	350	Drilling
Dyvi Offshore AS/Dyvi Epsilon	JU	13.63	10	Nat 1320UE	200	210	Drilling
J L Offshore/Dan Earl	JU	13.63	10	Nat 1320UE	200	205	Drilling
Maersk Drlg/Maersk Endeavour	JU	13.63		Nat 1320UE	200	225	Drilling
FRANCE							
Dyvi Offshore AS/STC Descartes	JU	13.63	10	Nat 1625E	200	350	Stacked
Foramer/Pelican	DS	13.63	10	Nat 1625DE	250	1100	Stacked
Global Marine Drlg/Moray Firth 1	JU	13.63	15	Nat 1625DE	250	300	Under Construction
Ocean Drlg Serv/Sedco 601	SS	18.75	10	C-E C2	200	1500	Drilling
GREECE							
J L Offshore/Dan Baron	DS	18.75	10	Idco E3000	200	1000	Drilling
IRELAND							
Diamond M/Diamond M Hunter	SS	18.75	10	Olwi E3C00	300	1500	Drilling
Dyvi Offshore AS/Dyvi Alpha	SS	18.75	10	Nat 1625DE	250	1250	Drilling
Southeastern Drlg Serv/Sedco 704	SS	18.75	10	Olwi 3000	250	1500	Drilling
ITALY							
Global Marine Drlg/Glomar Adriatic IV	JU	13.63	10	Nat 1625DE	250	300	Drilling
Global Marine Drlg/Glomar Biscay I	SS	18.75	10	Olwi E3000	250	1500	Drilling
Global Marine Drlg/Glomar Grand Banks	DS	18.75	10	Nat 1625DE	250	600	Drilling
Maersk Drlg/Maersk Endurer	JU	13.63	10	Olwi E2000	200	250	Drilling
Maersk Drlg/Maersk Vanguard	JU	13.63	10	Olwi E2000	200/ 5"	300	Drilling
Reading & Bates/Mr Jack	JU	20.00	10	Olwi E3000	250	300	Contracted
Saipem/Perro Negro	JU	13.63	10	Idco PE2500	210	130	Drilling
Saipem/Scarabeo II	SS	18.75	10	Idco PE2500	210	600	Drilling
Saipem/53	P	11.00	10	Idco H525D	70		Standby
Saipem/90	P	13.58	10	Idco E2100	250		Drilling
Somad-Sodint Marine Drlg/Perro Negro 2	JU	13.58	10	Olwi E2000	210	300	Drilling
MALTA							
Pacnorse Drlg/Pacnorse I	DS	16.75	10	C-E C3 Type II	300	5000	Drilling
Saipem/Scarabeo 4	SS	18.75	10	Nat 1625	250	1300	Drilling
Santa Fe Drlg/Mariner 2	SS	16.75	5	Nat 1320UE	200	600	Stacked
NETHERLANDS							
Deutsche Tiefbohr/T-38 D	M	11.00	10	Wils 75	130/ 3.5"		Workover
Deutsche Tiefbohr/T-39	P	13.63	3	Sup 400UE	60/ 3.5"		Workover
Dixilyn-Field Drlg/DF-87	JU	13.63	10	Nat 1320UE	250	300	Drilling
Dyvi Offshore AS/Dyvi Sigma	JU	13.63	10	Nat 1320UE	200	210	Drilling
Global Marine Drlg/Glomar Adriatic III	JU	13.63	10	Nat 1625DE	250	300	Drilling
Maersk Drlg/Maersk Explorer	JU	13.63	10	Nat 1320UE	250	224	Drilling
Penrod Drlg/64	JU	13.63	10	Nat 1625DE	300	210	Drilling
Penrod Drlg/67	JU	13.63	10	Nat 1625DE	300	210	Drilling
Penrod Drlg/80	JU	13.63	10	Nat UE	300	210	Stacked
Penrod Drlg/81	JU	13.63	10	Nat 1320UE	250	210	Drilling
Rowan Intl/Gilbert Rowe	JU	13.63	10	Nat 1625	250	300	Drilling
Transocean Drlg/Transocean No 1	JU	11.00	10	C-E A1500E	200	140	Drilling
Transocean Drlg/Transocean No 4	JU	13.63	10	Nat 1320UE	250	160	Drilling
Transocean Drlg/Transocean No 6	JU	13.63	10	C-E C3 Type II	200	300	Drilling
Zapata Offshore/Zapata Nordic	JU	13.63	10	C-E C3 Type II	200	300	Stacked
NORWAY							
Dyvi Offshore AS/Dyvi Delta	SS	18.75	10	Olwi E3000	250	1500	Drilling
Golar-Nor Offshore AS/Norjarl	SS	18.75	10	Nat 1625DE	200/ 5"	1000	Stacked
Golar-Nor Offshore AS/Nortrym	SS	18.75	10	Nat 1625DE	200/ 5"	1150	Drilling
Intl Chandlers/Sedco PSSI	SS					1500	Maintenance
Morco AS/1/6 A	P	13.63	10	Nat 1320UE			Maintenance
Morco AS/2/4 C	P	13.63	5	Olwi 940E			Maintenance
Morco AS/2/4 E	P	13.63	5	C-E C3			Maintenance
Morco AS/2/4 F	P	13.63	10	Nat 1320UE			Maintenance
Morco AS/2/7 C	P	13.63	5	MC U1220B			Maintenance
Morco AS/7/11-A	P	13.63	10	Idco E2100			Drilling
Morco AS/2/7 A-32	P	16.75	5	Nat 110UE			Maintenance
Morco AS/2/4 Alpha	P	13.63	5	C-E A1500E			Maintenance
Morco AS/2/4 Bravo	P	13.63	5	C-E A1500E			Drilling

EUROPE (Cont'd)

NORWAY (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Morco AS/2/4 Delta	P	13 63	5	C-E C2			Maintenance
Morco AS/2/7 Bravo	P	13 63	5	MC U1220EB			Drilling
Ocean Drlg & Expl/Ocean Nomad	SS	18.75	10	Nat 1625	250	1200	Stacked
Odfjell Drlg & Consulting/Deepsea Bergen	SS	18.75	10	Nat 1625DE	300	1500	Drilling
Odfjell Drlg & Consulting/Deepsea Saga H-3	SS	18.75	10	Nat 1625DE	300	1500	Stacked
Odfjell Drlg & Consulting/101 Statfjord "B"	P	13.63	5	Nat 1320UE	200	475	Drilling
Ross Drlg/Koldnes No 219 Ross Isle	Oth	18.75	10	Olwl E3000	250	1500	Under Construction
Ross Drlg/Neptuno Nordraug	Aker H3	18.75	10	Nat 1625DE	250	1000	Drilling
Ross Drlg/Ross Rig	Aker H3	18.75	10	Nat 1625DE	250	1250	Contracted
Smedvig Drlg/West Vanguard	SS	18.75	10	C-E 3000	250	1500	Drilling
Wilh Wilhelmsen/Treasure Scout	SS					2500	Drilling
Wilh Wilhelmsen/Treasure Seeker SS H-3	SS		15	C-E C3 Type II	250	1250	
Wilh Wilhelmsen/Treasure Swan	SS					2500	Drilling

PORTUGAL

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Sedco Inc/Sedco 472	DS	16.75	10	Olwl E3000	250	6000	Stacked

SPAIN

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Foramer/Petrel		16.75	10	Nat 1625DE	250	2000	Stacked
KCA Drlg/MV Polly Bristol	DS	18.75	10	Nat 1625DE	250	3000	Drilling
Sedco Inc/Sedco I	SS	16.75	5	Olwl E3000	250	1000	Production

UNITED KINGDOM

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Drlg/Bendoran Aker H-3	SS	21.25	2	Nat 1625DE	250/ 5"	660	Contracted
Atlantic Drlg/Benurackie Aker H3	SS	21.25	2	Nat 1625DE	250/ 5"	660	Contracted
Atlantic Drlg/Ocean Benloyal Aker H3	SS	13 63	10	Nat 1625DE	250/ 5"	660	Contracted
Bawden Drlg (UK)/32	P	10.00	3	Olwl 700	90		Drilling
Bawden Drlg (UK)/34	P	13 63	5	Nat 1320UE	220		Drilling
Bawden Drlg (UK)/35	P	16 63	5	Nat 1320UE	200		Drilling
Bawden Drlg (UK)/39	P	13 63	5	Nat 1320UE	220		Drilling
Bawden Drlg (UK)/40	P	13 63	5	Nat 1320UE	200		Drilling
Bawden Drlg (UK)/41	P	13 63	5	Nat 1320UE	200		Drilling
Bawden Drlg (UK)/42	P	13 63	5	Nat 1320UE	220/ 5"		Drilling
Canmar Intl/Sovereign Explorer	SS	18 75	15	Nat 1625E	280	2000	Stacked
Deutsche Tiefbohr/T-20	P	13 63	10	Nat 1320UE	180	460	Workover
Deutsche Tiefbohr/T-21	P	13 63	10	Nat 1320UE	180	460	Drilling
Deutsche Tiefbohr/T-25	P	13 63	10	Nat 1320UE	180	510	Drilling
Dixilyn-Field Drlg/96	SS	18 75	10	Nat 1625DE	250	1200	
Dixilyn-Field Drlg/97	SS	18 75	10	C-E C1112	250	1200	Drilling
Dyvi Offshore AS/Dyvi Omega	SS	18 75	10	Olwl E3000	250	1500	Drilling
Forex Neptune and/or Affil/Drill Star	SS	18 75	15	Nat 1625DE	250	1500	Drilling
Forex Neptune and/or Affil/Pentagone 84	SS	13 63	10	G-D 3000E	250	1050	Drilling
Global Marine Drlg/Glomar Biscay II	SS	18 75	10	Nat 1625DE	250	600	Drilling
Houlder Marine Drlg/Bay Driller	JU	18 63	5	Nat 80UE			Drilling
Houlder Marine Drlg/Shelf Driller	JU	13 63	10	Nat 1625E	250/ 5"	300	Stacked
Jebsens Offshore Drlg/Aladdin	SS	21 25	2	Olwl E3000	250	600	Drilling
Jebsens Offshore Drlg/Ali Baba	SS	18 75	10	Nat 1625DE	250	1000	Drilling
Jebsens Offshore Drlg/Sinbad Saxon	SS	13 63	10	Olwl E3000	250	600	Standby
Kingsnorth Marine Drlg/Dundee Kingsnorth Aker H-3	SS	18 75	10	Nat 1625DE	240		Drilling
Kingsnorth Marine Drlg/Kingsnorth UK Aker H-3	SS	18 75	10	Nat 1625DE	240		Drilling
KCA Drlg/51	P	13 63	5	Nat 1320UE	200		Drilling
KCA Drlg/52	P	13 63	5	Nat 1320UE	200		Drilling
KCA Drlg/53	P	13 63	5	Nat 1320UE	200		Under Construction
Loffland Bros/43	P	13 63	10	Idco E3000	200		Drilling
Loffland Bros/81	P	13 63	5	MC U1220EB	200		Drilling
Loffland Bros/82	P	13 63	5	MC U1220EB	200		Drilling
Loffland Bros/83	P	13 63	5	MC U1220EB	200		Drilling
Loffland Bros/84	P	13 63	5	MC U1220EB	200		Drilling
Ocean Drlg & Expl/Benloyal	SS	13 63	10	Nat 1625		1100	Drilling
Ocean Drlg & Expl/Ocean Bounty	SS	16 75	10	C-E C3 Type II	250	1200	Drilling
Ocean Drlg & Expl/Ocean Kokuei	SS	13 63	10	C-E C3 Type II	250	600	Drilling
Ocean Drlg & Expl/Ocean Liberator	SS	18 75	10	Nat 1625DE	250	1000	Stacked
Ocean Drlg & Expl/Ocean Victory	SS	13 63	10	C-E C3 Type II	250	600	Drilling
Odfjell Drlg & Consulting/STC Cicero	JU	13 63	1	Nat 1620DE	200	285	Drilling
Penrod Drlg/85	JU	13 63	10	Nat 1320UE	250	250	Drilling
Penrod Drlg/92	JU	13 63	10	Nat 1320UE	250	220	Drilling
Reading & Bates/M G Hulme Jr	SS	18.75	10	Nat 1625	250	1500	Contracted
Rowan Intl/Arch Rowan	JU	13 63	10	Nat 1625	250	300	Drilling
Rowan Intl/Cecil Provine	JU	13 63	10	Nat 1625	250	300	Drilling
Rowan Intl/Charles Rowan	JU	13 63	10	Nat 1625	250	300	Drilling
Santa Fe Drlg/Britannia R-65	JU	20 00	10	Nat 1320DE	200	160	Drilling
Santa Fe Drlg/Rig 111/112	P	21 75	5	Olwl 3000E	200		Drilling
Santa Fe Drlg/82	P	20 00	5	Nat 1320UE	200		Drilling
Santa Fe Drlg/135	SS	18 75	15	Olwl E3000	250	1500	Drilling
Santa Fe Drlg/140	SS	18 75	15	Olwl E3000	250	1500	En Route
Sea Drlg Netherlands/Sedneth 701	SS	21.25	10	Olwl E3000	250	1500	Drilling
Sedco Inc/Sedco/BP-711	SS	13 63	15	Olwl F3000	250	1500	Drilling
Sonat Offshore Drlg Inc Group/Chris Chenery	SS	18 75	10	Nat 1625DE	200	600	Drilling
Southeastern Drlg Serv/Sedco 700	SS	21 25	10	Olwl E3000	250	1500	Drilling
Southeastern Drlg Serv/Sedco 703	SS	18 75	10	Olwl 3000	250	2000	Drilling
Southeastern Drlg Serv/Sedco 707	SS	21 25	2	Olwl E3000	250	2000	Drilling
Transworld Drlg/58	SS			C-E C3000	250	600	Production
Western Oceanic/Apollo II	JU	13 58	10	C-E C3	200	300	Drilling
Western Oceanic/Western Pacesetter I	SS	18 75		Nat 1625DE	250	600	Drilling
Western Oceanic/Western Pacesetter II	SS	18 75	10	Nat 1625DE	250	1200	Drilling
Western Oceanic/Western Pacesetter IV	SS	18 75	10	C-E C3 Type II	250	1500	Drilling

WEST GERMANY

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Deutsche Tiefbohr/T-24		13 63	10	Nat 80BUE	130		Stacked
Transocean Drlg/Transocean No 2	JU	13 63	10	Nat 1625DE	200	150	Under Repair

MIDDLE EAST

QATAR

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Forex Neptune and/or Affil/Trident II	JU	13.63	10	G-D 2100RE	254	350	Drilling
Santa Fe Drlg/Rig 103	JU	20.00	5	C-E C2	200	250	Drilling

SAUDI ARABIA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Arabian Drlg/Arabdrill 2	T			Nat 110	190		Drilling
Arabian Drlg/AD 8	JU	13.63	5	Nat 110UE	190	150	Drilling
Loffland Bros/Ocean Master V/Rig 210	JU			MC U914EC	180	160	Drilling
Loffland Bros/Ocean Master VI/Rig 220	JU			MC U914EC	180	160	Drilling
Loffland Bros/Ocean Master VII/Rig 230	JU			MC U914EC	180	160	Drilling
Loffland Bros/Ocean Master VIII/Rig 240	JU			MC U914EC	180	160	Drilling
Loffland Bros/Oceanmaster III-R-150	JU	13.66	3	MC U712A	140	160	Stacked
Loffland Bros/Orville Fisher/Rig 183	P	13.63	5	MC U914C	180	160	Stacked
Maersk Drlg/Maersk Venturer	JU	13.63		Olwl E2000	200	300	Drilling
Maersk Drlg/Maersk Voyager	JU	13.63		Olwl E2000	200	300	Drilling
Reading & Bates/Ron Tappmeyer	JU	13.63	10	Olwl E3000	200	300	Contracted
Sonat Offshore Drlg Inc Group/Jubilee	JU	13.63	5	C-E A1500E	200	225	Drilling
Sonat Offshore Drlg Inc Group/North Star	JU	13.63	5	Nat 1320DE	200	200	Drilling
Sonat Offshore Drlg Inc Group/Offshore Bahram	JU	13.63	5	Idco ED1200	200	200	Drilling

UNITED ARAB EMIRATES

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atwood Oceanics Pacific/Bull Run	T	13.63	5	Nat 1320UE	200/ 5"	400	Drilling
Atwood Oceanics Pacific/Williamsburg	PT	13.63	5	C-E C	200/ 5"	300	Stacked
Foramer/Ile de France	JU	13.63	5	Nat 1625DE	250	200	Drilling
Foramer/Ile du Levant	JU	13.63	5	Nat 1320DE	200	150	Drilling
Foramer/Tourmalines	JU	10.00	5	Nat 80B	120	100	Workover
Forex Neptune and/or Affil/Trident 5	JU	10.00	5	Idco E900	120	150	Stacked
Forex Neptune and/or Affil/Trident-III	JU	13.63	5	G-D 2100E	254	300	Drilling
Japan Drlg/Hakuryu VI	JU	13.63	5	Nat 1320UE	200	186	Drilling
Japan Drlg/Hakuryu VII	JU	13.63	10	Nat 1320UE	200	186	Drilling
Japan Drlg/Hakuryu 8	JU	13.63	10	Nat 1320UE	200	186	Drilling
Loffland Bros/Ocean Master IV/Rig 160	JU	13.86	3	MC U914	180	110	Drilling
Maersk Drlg/Maersk Victory	JU	13.63		Olwl E2000	200	300	Drilling
National Drlg/Al Ghallan	JU	13.63	5	Nat 1320UE	20	120	Drilling
National Drlg/Al Ittihad	JU	13.63	10	Nat 1320UE	200	150	Drilling
National Drlg/Al Yasat	JU	13.63	5	Nat 1320UE	200	170	Drilling
National Drlg/Diyina	JU	13.63	5	Nat 1320UE	200	170	Drilling
National Drlg/Junana	JU	13 63	10	Nat 1320UE	200	140	Drilling
National Drlg/Yemila	JU	13 63	10	Nat 1320UE	200/ 5"	220	Drilling
Ocean Drlg Serv/Sedco 160	JU	13.63	10	C-E C2	250	160	Drilling
Ocean Drlg Serv/Sedneth II	JU	13.63	10	Olwl 3000E	250	200	Drilling
Ocean Drlg Serv/Sedneth 201	JU	13 63	10	C-E C2	250	200	Drilling
Ocean Drlg Serv/Sedneth 202	JU	13.63	10	C-E C2	250	200	Drilling
Ocean Drlg Serv/75	JU	13 63	5	Olwl 96	160	100	Drilling
Sonat Offshore Drlg Inc Group/Enterprise	JU	18.63	2	Nat 130		120	Maintenance
Sonat Offshore Drlg Inc Group/Hustler	JU	12.00	5	C-E A550	100	90	Drilling
Sonat Offshore Drlg Inc Group/Offshore Antares	JU	13.38	5	Nat 130	150	115	Drilling
Sonat Offshore Drlg Inc Group/Offshore Jupiter	JU	13.63	5	C-E C1 Type II	160	130	Drilling
Sonat Offshore Drlg Inc Group/Offshore Mercury	JU	13 63	10	Nat 1320DE	200	250	Stacked
Sonat Offshore Drlg Inc Group/Rig 54	JU	13 63	5	Nat 130E	200	150	Drilling
Transocean Drlg/Transocean No 5	JU	13 63	10	Nat 1625	250	300	Drilling
Transworld Drlg/63	JU	13 63	5	C-E C3 Type II	250	250	Drilling
Western Oceanic/Apollo III	JU	13 63	10	C-E C3II	200	300	Drilling
Western Oceanic/Apollo IV	JU	13 63	10	C-E C350	200	400	Drilling
Zapata Offshore/Bonito II	JU	13 63	10	Nat 1625	250	300	Drilling
Zapata Offshore/Chaparral	JU	13 63	10	Olwl 3000E	250	240	Drilling
Zapata Offshore/Heron	JU	13.63	10	Nat 1625DE	250	300	Drilling
Zapata Offshore/Topper II	JU	13.63	5	Nat 110UE	165	115	Drilling
Zapata Offshore/33	JU	13 63	10	Nat 1320	200	250	Drilling

SOUTH AMERICA

ARGENTINA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Reading & Bates/George H Galloway	JU	13.63	10	Nat 1625DE	250	300	Under Construction
Rio Colorado S A/Rio Colorado I	JU	13 63	5	Nat 1320UE	200	300	Drilling

ARUBA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Western Offshore Drlg & Expl/Western Offshore IX	DS	18.75	10	Nat 1625DE	250	750	Stacked

BRAZIL

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Dolphin Titan Intl/141	P	13 63	5	U1220EB	250	300	Drilling
Dolphin Titan Intl/142	PT	13 63	10	C-E A1500	200	250	Stacked
Forex Neptune and/or Affil/Pentagone 82	SS	18.75	10	C-E C3UE	250	1050	Drilling
Global Marine Drlg/Glomar High Island V	JU	13 63	10	Nat 1320UE	200	250	Drilling
Griffin-Alexander Drlg/G-A IV	JU	13 63	10	MC EB1220	250	200	Stacked
Interocean Drlg SA/Interocean Discoverer	DS	18.75	10	C-E C2 Type II	200	1500	Drilling
Interocean Drlg SA/Interocean II	JU	13 63	10	C-E C2	200	307	Drilling
Keydril/Key West	JU	13 63	10	C-E C3	300	350	Drilling
Maersk Drlg/Maersk Pioneer SS	SS	18.75	10	C-E C2 Type II	200	600	Drilling
Marlin Drlg/Marlin 14	JU	13 63	1	Nat 1625DE	250	150	Drilling
Montreal Engenharia/Montreal III	JU	13.38	10	Nat 1320UE	210	250	Drilling
Montreal Engenharia/Montreal IV	JU	13.38	10	Nat 1625DE	250	300	Drilling
Ocean Drlg & Expl/Ocean Cyclone	DS	16.75	5	Nat 1625	250	600	Drilling
Ocean Drlg & Expl/Ocean Zephyr	SS	21.25	10	C-E C3 Type II	250	600	Drilling
Ocean Drlg & Expl/Zephyr II	SS	21.25	10	Nat 1623	250	600	[illegible]
Odebrecht Perfuracoes/Norbe I	JU	13 63	10	Nat 1320UE	250	300	[illegible]
Odebrecht Perfuracoes/Norbe III	JU	13 63	10	Nat 1625UE	250	[illegible]	[illegible]
Penrod Drlg/62	JU	13 63	10	Nat 1625DE	300	330	[illegible]
Penrod Drlg/71	SS	13 63	10	Nat 1625	300	1000	Drilling
Reading & Bates/C E Thornton	JU	20.00	10	DWS E3000	250	300	Stacked
Sedco Inc/Sedco 135-F	SS	13 63	10	Olwl 3000E	250	800	Production
Sedco Intl SA/Sedco 135-D	SS	16 75	5	Olwl 3000E	250	800	Production

SOUTH AMERICA (Cont'd)

Contractor And Rig Name or No.	BOP Stack Type	BOP Stack Size (ID)	BOP Stack Pressure Rating, 1,000 psi	Drawworks Make And Model	Rated Depth With 4½-in. Pipe, 100 ft.	Rated Water Depth	Status
BRAZIL (Cont'd)							
Sonat Offshore Drlg Inc Group/Discover 534	DS	16.75	10	Nat 1625DE	200	3000	Drilling
Sonat Offshore Drlg Inc Group/Orion	JU	13.63	10	Nat 1320DE	200	275	Drilling
Transworld Drlg/61	SS	13.63	10	C-E A1500E	200	600	Production
Triangle Drlg/Norbe II	JU	13.63	10	Olwl 3000E	250	300	Drilling
CHILE							
Diamond M/Magallanes	JU	13.63	5	Olwl E2000	200	150	Drilling
Diamond M/Nugget	JU	13.63	5	Olwl E3000	300	300	Drilling
TRINIDAD							
Dolphin Titan Intl/130	P	13.63	10	G-D 2100E	250		Drilling
Santa Fe Drlg/Bluewater No 3	SS	16.75	10	Nat 1625DE	250	600	Stacked
Tropic Drlg/DS Tainaron	DS	18.75	10	Nat 1320UE	300	1000	Stacked
Well Services/6	P	13.63	6	Nat 80B	120		Drilling
Well Services/7	P	13.63	6	S/B 4210	80	85	Drilling
Well Services/10				Nat C125	140		Drilling
TRINIDAD & TOBAGO							
Skinner Marine Operations/7		7.06	3	Idco H20	35		Stacked
Skinner Marine Operations/14		7.06	3	Idco H25	40		Stacked
Skinner Marine Operations/Skinmar I	P	13.63	10	Olwl E2000	200	185	Workover
Skinner Marine Operations/Skinmar IV	P	13.63	5	Olwl 840E	160	185	Stacked
Skinner Marine Operations/Skinmar V	P	13.63	5	Olwl 760E	120		Stacked
Skinner Marine Operations/Skinmar VI	P	13.63	5	Olwl 760E	120	185	Workover
Skinner Marine Operations/Skinmar VII	P	13.63	5	Olwl 840E	160	88	Drilling
VENEZUELA							
Loffland Bros/R-71-WO	B			Idco H25			Drilling
Loffland Bros/V-101	B	6.00	5	Idco 711	100		Stacked
Loffland Bros/V-105	B	10.00	5	MC U914B	180		Drilling
Loffland Bros/V-114	B	10.00	5	MC U914C	180		Stacked
Santa Fe Drlg/Orinoco I (R132)	B	21.25	10	Olwl E2000	200	20	Stacked
Santa Fe Drlg/Reina Del Lago	B	12.00	3	Nat 80E	140	100	Drilling
Santa Fe Drlg/Rey Del Lago	B	12.00	3	Nat 80E	140	100	Drilling

UNITED STATES

Contractor And Rig Name or No.	BOP Stack Type	BOP Stack Size (ID)	BOP Stack Pressure Rating, 1,000 psi	Drawworks Make And Model	Rated Depth With 4½-in. Pipe, 100 ft.	Rated Water Depth	Status
ALABAMA-UNDESIGNATED							
Global Marine Drlg/Glomar High Island IV	JU	13.63	10	Nat 1320UE	200	250	Drilling
ALABAMA-MOBILE							
Dixilyn-Field Drlg/80 Gulf of Mexico	JU	13.63	10	Nat 1320DE	200	370	Under Repair
ALABAMA-MOBILE BAY							
Penrod Drlg/202	S	13.63	10	Nat 1320UE	250		Drilling
ALASKA-UNDESIGNATED							
Rowan Co/Rowan Middletown	JU	13.63	10	Nat 1625		300	Stacked
Sedco Maritime/Sedco 708	SS	18.75	10	Olwl E3000	250	2000	Drilling
CALIFORNIA-UNDESIGNATED							
Diamond M/Diamond M Eagle	SS	18.75	10	Olwl E3000	300	2000	Drilling
Diamond M/Diamond M Falcon	SS	18.75	10	Olwl E3000	300	2000	Stacked
Diamond M/Diamond M General	SS	18.75	10	Olwl E3000	300	1200	Drilling
Global Marine Drlg/Glomar Atlantic	DS	18.75	10	Nat 1625DE	250	2000	Drilling
Global Marine Drlg/Glomar Pacific	DS	16.75	10	Nat 1625DE	250	2000	Drilling
Global Marine Drlg/Glomar Platform I	P	13.63	5	Nat 110UE	160		Drilling
Global Marine Drlg/Glomar Platform II	P	13.63	5	Nat 110UE	160		Drilling
JFP Well Serv/JFP Three	JU	13.63	10	Olwl E2000	250	300	Drilling
Penrod Drlg/73	SS			Nat 1625DE	300		Drilling
Penrod Drlg/96	JU	13.63	10	Nat 1320UE	250		Drilling
Rowan Co/Rowan-Alaska	JU	13.63	10	Nat 1625DE	300	350	Stacked
Sedco Maritime/Sedco 702	SS	21.25	10	Olwl E3000	250	1200	Drilling
Zapata Offshore/Zapata Concord	SS	18.75	10	Olwl E3000	250	2000	Drilling
CALIFORNIA-LOS ANGELES HARBOR							
Ocean Drlg & Expl/Ben Ocean Lancer	DS	16.75	10	G-D 3000E	250	3000	Stacked
CALIFORNIA-SANTA BARBARA CHNL							
Challenger Drlg/#30 EOS				Nat 1320DE	220		Drilling
CALIFORNIA-VENTURA							
Keydril/Key Singapore	JU	13.63	10	Nat 1625	250	300	Drilling
FLORIDA-E BAY							
Atlantic Pacific Marine/12	B	13.63	5	Olwl E2000	250	13	
LOUISIANA-UNDESIGNATED							
Bokenkamp Drlg/Rig #1	P	13.63	10	Olwl E2000	250		Stacked
Bokenkamp Drlg/Rig #3	P	13.63	10	Olwl E2000	250		Stacked
CRC Mallard Well/Barge 1	B			Wils 60	90		
CRC Mallard Well/Barge 3	B			Nat 55	90		
CRC Mallard Well/Barge 4	B			Nat 80	110		
CRC Mallard Well/Barge 7	B			Nat 55	110		
CRC Mallard Well/Barge 9	B			Wils 90	110		
CRC Mallard Well/12	B	10.00	5	Wils 90	120	14	
CRC Mallard Well/14	B	6.00	5	Wils 90	120	14	
CRC Mallard Well/15	B	10.00	5	Wils 90	120	14	
CRC Mallard Well/17	B	10.00	5	Wils 90	140	14	
CRC Mallard Well/18	B	10.00	5	Wils 90	120	14	
CRC Mallard Well/19	B	10.00	5	Wils 90	120	14	
CRC Mallard Well/20	B	10.00	5	Wils 90	120	14	
CRC Mallard Well/34		6.00			100		Stacked
Diamond M/Century	SS	18.75	10	Olwl E3000	300	600	Drilling
Diamond M/Diamond M Gem	JU	13.63	10	Olwl E3000	300	300	Stacked
Diamond M/Diamond M New Era	SS	18.75	10	Olwl E3000	300	1200	Drilling
Diamond M/Diamond M 99	JU	13.63	10	Olwl E3000	300	300	Drilling

UNITED STATES (Cont'd)

Contractor And Rig Name or No.	BOP Stack Type	BOP Stack Size (ID)	BOP Stack Pressure Rating, 1,000 psi	Drawworks Make And Model	Rated Depth With 4½-in. Pipe, 100 ft.	Rated Water Depth	Status
LOUISIANA-UNDESIGNATED (Cont'd)							
Diamond M/Rig 47	BP	13.63	10	Olwl E3000	300	20	Drilling
Diamond M/93	P	13.63	5	Nat 110	160		Drilling
Diamond M/94	P	13.63	5	Olwl E2000	200		Drilling
Diamond M/98	P	13.63	5	Olwl E2000	200		Drilling
Dolphin Titan Intl/102	JU	6.00	5	Idco H35D	150	70	Workover
Dolphin Titan Intl/103	JU	10.00	5	Idco H35D	150	70	Workover
Dolphin Titan Intl/105	JU	10.00	10	Nat 610	200	100	Workover
Dolphin Titan Intl/106	JU	10.00	10	Nat 610	200	100	Stacked
Dolphin Titan Intl/128	P	13.63	10	C-E C3 Type II	250		Drilling
Dolphin Titan Intl/129	P	13.63	10	C-E C3 Type II	250		Drilling
Dual Drlg/23	P	13.63	10	Olwl E3000	250		Stacked
Dual Drlg/24	P	13.63	10	Olwl E2000	250		Drilling
Global Marine Drlg/Glomar Coral Sea	DS	18.75	10	Nat 1625DE	250	1500	Drilling
Global Marine Drlg/Glomar High Island I	JU	13.63	10	Nat 1320UE	200	250	Drilling
Global Marine Drlg/Glomar High Island VI	JU	13.63	10	Nat 1320UE	200	250	Drilling
Global Marine Drlg/Glomar High Island VII	JU	13.63	10	Nat 1320UE	200	250	Drilling
Global Marine Drlg/Glomar Main Pass II	JU	13.63	10	Nat 1625DE	250	300	Drilling
Global Marine Drlg/Glomar Main Pass IV	JU	13.63	10	Nat 1625DE	250	300	Drilling
Helmerich & Payne Intl Drlg/90	P	13.63	5	Olwl E2000	200		Drilling
Helmerich & Payne Intl Drlg/91	P	13.63	5	Olwl 2000	200		Drilling
Helmerich & Payne Intl Drlg/100	P	13.63	10	Olwl E3000	300		Drilling
Huthnance Drlg/12	P	13.63	10	MC U1220	250		Stacked
Marine Drlg/J Storm VI	JU	13.63	10	Nat 1625M	250	250	Stacked
Marine Drlg/J Storm VIII	JU	13.63	10	Nat 1320	200	150	Stacked
Marine Drlg/J Storm XII	JU	13.63	10	Nat 1320	200	200	Stacked
Marine Drlg/J Storm XVII	JU	13.63	10	Nat 1320M	200	250	Stacked
Marine Drlg/Stormdrill V	JU	13.63	10	Nat 130	200	115	Stacked
Marlin Drlg/Marlin #10	P	11.00	10	Nat 610E	100		Drilling
Marlin Drlg/Marlin #9	P	11.00	10	Nat 610E	100		Drilling
Marlin Drlg/Marlin No 1 Tender Type	P	13.63	5	Nat 1320DE	200		Stacked
Marlin Drlg/Marlin No 2	P	13.63	5	Nat 1320DE	200		Stacked
Marlin Drlg/Marlin No 5	P	13.63	10	Nat 1320DE	200		Drilling
Marlin Drlg/Marlin No 7	SS	13.63	10	Nat 1625DE	300	1000	Drilling
Marlin Drlg/Marlin 15	P	13.63	1	Nat 1320DE	200		Stacked
Marlin Drlg/Marlin 16	P	13.63	1	Nat 1320DE	200		Stacked
Marlin Drlg/Marlin 4	JU	13.63	10	Nat 1625DE	250	150	Drilling
MGF Drlg/31	B	10.00	5	Olwl 76	120	8-10	Stacked
Noble Drlg/#31	P			Olwl E2000	200		Stacked
Noble Drlg/Barge 3	B			Nat 1320UE	200		Stacked
Noble Drlg/Barge 4	B			Nat 160S	250		Stacked
Noble Drlg/PB-2	B			Olwl E3000	250		Stacked
Noble Drlg/27	P	13.63	10	G-D 1100E	180		Drilling
Noble Drlg/28				G-D 1500E	200		Drilling
Noble Drlg/30	P	13.63	10	G-D 1500E	200		Drilling
Ocean Drlg & Expl/Ocean Endeavour	SS	18.75	10	C-E C3 Type II	250	1000	Stacked
Ocean Drlg & Expl/Ocean Star	JU	13.63	5	Nat 1320UE	250	173	Stacked
Penrod Drlg/Barge 43	B	13.63	10	Nat 1320DE	250	12	Stacked
Penrod Drlg/Barge 44	B	13.63	10	Nat 1625DE	300	10	Stacked
Penrod Drlg/Barge 46	B	13.63	10	C-E ECB	200	16	Stacked
Penrod Drlg/Barge 48	B	13.63	10	Nat 1625DE	300	20	Stacked
Pool Offshore Serv/11 Workover	P	2.50	5	Wils Super			Stacked
Pool Offshore Serv/16 Workover	P	2.50	5	Wils Super			Stacked
Pool Offshore Serv/20 Workover	B	2.50	5	Wils Super 38		10	Stacked
Pool Offshore Serv/40 Hyd Snubbing	P	4.16	10	Hydra LHD135T			Stacked
Pool Offshore Serv/41 Hyd Snubbing	P	4.16	10	Hydra LHD135T			Stacked
Rowan Co/Rowan Louisiana	JU	13.63	10	Nat 1625DE		300	Drilling
Powan Co/Rowan Paris	JU	13.63	10	Nat 1625	250	300	Drilling
Salen Protexa Drlg/Salenergy III	P	13.63	10	MC U1220EB	250		Stacked
Service Equipment & Engrg/4	P	10.00		OIME 500			Stacked
Service Equipment & Engrg/6	P	10.00		OIME 750	100		Stacked
Service Equipment & Engrg/11	P	13.63	5	Idco E900	140		Stacked
Service Equipment & Engrg/12	P	13.63	500	Idco E900	140		Stacked
Sonat Offshore Drlg Inc Group/Offshore Pegasus	JU	13.38	10	Nat 110	160	125	Drilling
Western Oceanic/Alaskan Star	SS	16.75	10	C-E C3	250	1500	Drilling
Western Oceanic/Nike I	JU	13.63	10	Nat 1320	200	150	Drilling
Western Oceanic/Western Delta	JU	13.63	5	Nat 80UE	150	173	Stacked
Western Oceanic/Western Pacesetter III	SS	18.75	10	C-E C311	250	1200	Drilling
Western Oceanic/Western Triton IV	JU	13.63	10	C-E C2	200	250	Drilling
Zapata Offshore/Endeavour	JU	13.63	10	C-E CE3000E	200	215	Drilling
Zapata Offshore/Rig 30	P			MC U1220EB			Drilling
LOUISIANA-ASSUMPTION							
Goldrus Marine Drlg/Goldrus Marine 2	B	13.63	10	Olwl 3000E	300	20	Drilling
LOUISIANA-BAY MARCHAND							
Transworld Drlg/73	S	13.63	10	Olwl E3000	250	100	Drilling
LOUISIANA-BELLE CHASSE							
Ocean Drlg & Expl/Ocean Tempest	DS	16.75	10	Nat 1625DE	250	600	Stacked
LOUISIANA-BRETON SOUND							
Houtech Drlg/Houtech JU-I	JU	11.25	10	G-D 700M	100	73	Drilling
Transworld Drlg/44	S	13.63	5	Idco 1350S	180	40	Drilling
LOUISIANA-CAMERON							
Diamond M/Barge 16	B	13.63	10	Idco E2500	250	12	Drilling
Goldrus Marine Drlg/Goldrus Marine 4	B	13.63	10	Olwl 3000E	300	20	Stacked
Keydril/Key Manhattan	JU	13.63	10	Nat 1625	250	300	Stacked
Quarles Drlg/17	B	11.00	10	Nat 160E	250	20	Drilling
Rebstock Drlg/Rig No 5	B	13.63	5	Nat 1320	200	24	Drilling
Savage Drlg/Ponca	JU	13.00	10	Nat 1320UE	250	150	Stacked
Two R Drlg/22	B			C-E C3	300	10	Completion
Two R Drlg/2R20	B			C-E C3	250	12	Drilling
LOUISIANA-CHANDELEUR							
Penrod Drlg/91	JU	13.63	10	Nat 1320UE	250		Drilling
LOUISIANA-E COTE BLANCHE BAY							
Atlantic Pacific Marine/9	B	13.63	10	Olwl E2000	250	20	

UNITED STATES (Cont'd)

LOUISIANA-EAST CAMERON

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Booker Drlg/14	P	10 00	5	G-D 3000			Drilling
Chiles Drlg/Platform Rig I	P	13 63	10	Nat 1320UE	200		Drilling
Glendel Drlg/2-Bob Warner	JU	13.37	10	MC U914EC	180	110	
Huthnance Drlg/Vanguard II	JU	13 63	10	C-E U1220EB	250	300	Drilling
Keyes Offshore/Keyes - 302	JU	13 63	10	C-E C2	200	300	Drilling
Nordrill Intl/Nordrill Oiler	JU	13 63	10	C-E C2	250	200	Drilling
Ocean Drlg & Expl/Ocean Leader	JU	13 63	5	Nat 130	250	175	Drilling
Phoenix Management/Rig #5-The Mr Ric	JU	13 63	10	G-D 2100E	200	100	Drilling
Rowan Intl/Rowan-Houston		13 63	10	Nat 1325UE	250	225	Drilling
Transworld Drlg/69	S	13 63	10	Olwl E3000	250	100	Drilling

LOUISIANA-EUGENE ISLAND

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Pacific Marine/Ranger IV	JU	10 00	5	Olwl 660	90	73	
Cactus Intl/103	P	13 63	5	Olwl E2000	250		Drilling
Chiles Drlg/Seabee	JU	13 63	10	Nat 1625DE	250	250	Drilling
Dixilyn-Field Drlg/DF-86	JU	13 63	10	Nat 1320UE	200	200	Drilling
Fluor Drlg Serv/Rig 63	P	13 63	10	Nat 1320UE	200		Drilling
Harris Well Serv/16	B	7 16	5	MC U36A	100	12	Drilling
Huthnance Drlg/Vanguard I	JU	13 63	10	MC U1220EB	250	300	Drilling
Keyes Offshore/Keyes - 300	JU	13 63	10	C-E C2	200	300	Drilling
Marine Drlg/J Storm VII	JU	13 63	10	Nat 1625M	250	377	Drilling
Noble Drlg/NN-1	JU			G-D 1500	200	12- 45	Drilling
Ocean Drlg & Expl/Barge A	S	14 00	5	Idco 2500	250	70	Drilling
Ocean Drlg & Expl/John Hayward	S	10 00	5	C-E EDA	250	30	Drilling
Ocean Drlg & Expl/Mr Charlie	S	13 63	5	C-E EDES	250	40	Stacked
Ocean Drlg & Expl/Ocean King	JU	13 63	10	Nat 1625	250	300	Drilling
Penrod Drlg/45	B	13 63	10	Nat 1625DE	300	20	Drilling
Penrod Drlg/51	S	13 63	10	C-E A1550E	250	60	Drilling
Reading & Bates/63	P	13 63	10	Olwl E3000	250		Contracted
Rowan Co/Rowan Fort Worth	JU	13 63	10	Nat 1625	250	300	Drilling
Salen Protexa Drlg/Totonaca	JU	13 63	10	MC U1220BE	200	250	
Service Equipment & Engrg/5	P	10 00		OIME 750	100		Drilling
Transworld Drlg/47	S	13 63	10	C-E A1500E	200	70	Stacked
Transworld Drlg/50	JU	13 63	5	Nat 55	120	70	Stacked
Transworld Drlg/59	JU	13 63	5	Nat 1320UE	200	125	Stacked
Transworld Drlg/72	S	13 63	10	Olwl E3000	250	100	Drilling
Zapata Offshore/Louisiana	S	13 63	5	Unit U1220BE	200	50	Drilling

LOUISIANA-EWING BANK

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Zapata Offshore/Zapata Yorktown	SS	18 75	10	Olwl E3000	250	2000	Drilling

LOUISIANA-FOURCHON DOCK

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Ocean Drlg & Expl/Ocean Liberty	JU	10 00	5	Nat 80	120	80	Stacked

LOUISIANA-GRAND ISLE

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Keyes Offshore/Keyes - 250	JU	13 63	10	C-E C2	200	250	Drilling
Noble Drlg/Sam Noble	JU			Olwl E3000	250		Drilling
Penrod Drlg/69 Mobil	JU	13 63	10	Nat 1625DE	300	330	Drilling
Pool Offshore Serv/4 Workover	P	2 50	5	Wils Super			Drilling
Pool Offshore Serv/8 Workover	P	2 50	5	Wils Super 38			Drilling
Pool Offshore Serv/12 Workover	P	2 50	5	Wils Super			Drilling
Pool Offshore Serv/15 Workover	P	2 50	5	Wils Super 38			Drilling
Quarles Drlg/21	B	13 63	10	Olwl 940E	200	30	Stacked

LOUISIANA-GREEN CANYON

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Penrod Drlg/72	SS	13 63	10	Nat 1625DE	300	300	Drilling
Zapata Offshore/Saratoga (27)	SS			Olwl E3000			Drilling
Zapata Offshore/Zapata Lexington	SS	18 75	10	Olwl E3000	250	2000	Drilling

LOUISIANA-HOUMA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Loffland Bros/4	P	13 63	5	MC U1220BE	220		Stacked
Loffland Bros/17	P	13 63	5	MC U1220BE	220		Stacked
Loffland Bros/75	P	13 63	5	MC U1220BE	220		Stacked
Loffland Bros/78	P	13 63	5	MC U1220BE	220		Stacked
Platform Well Serv/7	P	6 00	5	OIME 750	7500		Stacked
Platform Well Serv/8	P	10.00	5	OIME 750	7500		Stacked
Santa Fe Drlg/Swamp Chief R-86	B	13 63	5	Nat 110UE	160	22	Stacked

LOUISIANA-IBERIA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Pacific Marine/15							
Cliffs Drlg/1	B	13 63	10	MC U1220EB	300	18	Stacked
CRC Mallard Well/Mallard 33		6 00			80		Stacked
Glendel Drlg/Mr "A W" #4	B	13 63	10	S/B NE12	250	12	Drilling
Glendel Drlg/Mr Beldon #7	B	13 63	10	S/B NE12	250	20	Drilling
Goldrus Marine Drlg/Goldrus Marine 3	B	13 63	10	Olwl 3000E	300	20	Drilling
Noble Drlg/PB-3	B			Nat 1625DE	250		Drilling
Sanders Drlg/1	B			C-E A800	140		Stacked
Sanders Drlg/2	B			S/B N12A	250		Stacked
Two R Drlg/2R21	B			C-E C3	250	12	Drilling

LOUISIANA-JEFFERSON

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Mayronne/M-142	P	13 63	5	S/B N12	180		Stacked
Mayronne/M-152	P	13 63	5	S/B N20	180		Stacked
Shank Drlg Dean/DS-I	B	10 00	5	Beth 10131500	180	10	Drilling

LOUISIANA-LAFOURCHE

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Pacific Marine/11	B	13 63	10	Olwl E2000	250	13	
Atlantic Pacific Marine/17							
Blocker Drlg & Marine/East Bay	B						
Blocker Drlg & Marine/Galveston Bay	B						
Blocker Drlg & Marine/Grand Bay	B						
Blocker Drlg & Marine/Terrebonne Bay	B	13 63	5	OIME SL9E	200	12	Stacked
Blocker Drlg & Marine/West Bay	B						
Booker Drlg/Rig No 170	P	10 00	5	G-D 500			Stacked
Booker Drlg/8	P	2 50	5	G-D 3000			Stacked
Booker Drlg/11	P	10 00	5	G-D 3000			Stacked
Booker Drlg/15	P	10 00	5	G-D 3000			Stacked
Booker Drlg/50	P	10 00	5	G-D 500			Stacked
Booker Drlg/60	P	10 00	5	G-D 500			Stacked
Booker Drlg/70	P	10 00	5	G-D 500			Stacked
Booker Drlg/80	P	10 00	5	G-D 500			Stacked

UNITED STATES (Cont'd)

LOUISIANA-LAFOURCHE (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Booker Drlg/90	P	6.00	5	G-D 500			Stacked
Booker Drlg/110	P	10.00	5	G-D 500			Stacked
Booker Drlg/120	P	10.00	5	G-D 500			Stacked
Booker Drlg/130	P	10.00	5	G-D 500			Stacked
Booker Drlg/150	P	10.00	5	G-D 500			Stacked
Booker Drlg/160	P	10.00	5	G-D 500			Stacked
Booker Drlg/950	P	13.63	5	G-D 1000	100		Stacked
Booker Drlg/951	P	10.00	5	G-D 1000	80		Stacked
Booker Drlg/952	P	13 63	5	G-D 1000	80		Stacked
Diamond M/46	BP	13 63	10	Olwl E3000	300	20	Drilling
Noble Drlg/S-55	SS	13.63	10	Nat 1625DE	250	80	Drilling
Pool Offshore Serv/5 Workover	B	6.00	5	Wils Mogul 42		10	Drilling
Pool Offshore Serv/18 Workover	B	7.06	5	Wils Mogul 42	80	12	Drilling
Quarles Drlg/18	B	11.00	10	G-D 800E	140	10	Drilling
Shank Drlg Dean/4	B			C-E C3	300	12	Drilling

LOUISIANA-LIVINGSTON

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Bay Drlg/Hebert	B	10.00	5	C-E BL1013	165	10	

LOUISIANA-MAIN PASS

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Pacific Marine/Ranger III	JU	10 00	5	G-D DW500R	90	70	
Booker Drlg/20	P	6 00	5	G-D 500			Drilling
Booker Drlg/100	P	6 00	5	G-D 500			Drilling
Dual Drlg/29	P	13 63	10	C-E C3	300		Drilling
Griffin-Alexander Drlg/G-A III	JU	13 63	10	MC EB1200	250	250	Stacked
Keyes Offshore/Keyes 303	JU	13 63	10	C-E C3	250	300	Drilling
Loffland Bros/74	P	13 63	5	MC U1220BE	220		Drilling
Ocean Drlg & Expl/Ocean 66	JU	13 63	5	C-E C3 Type I	250	120	Drilling
Penrod Drlg/82	JU	13 63	10	Nat 1320DE	250	250	Drilling
Transworld Drlg/68	S	13 63	10	C-E C3 Type II	250	100	Drilling
Zapata Offshore/29	P	13 63	10	Olwl E2000	200		Drilling

LOUISIANA-MISSISSIPPI CANYON

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Dual Drlg/25	P	13 63	10	Olwl E3000	250		Drilling
Penrod Drlg/34	P	13 63	10	Nat 110UE	165	300	Drilling

LOUISIANA-MORGAN CITY

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Reading & Bates/Leo M Clark	PT	13 63	10	Nat 110M	180		Stacked
Reading & Bates/N J Guilbeau	P	13 63	10	Nat 1320	180		Stacked
Reading & Bates/Rig 40	P	13 63	10	Nat 1625	180		Stacked
Reading & Bates/Rig 50	P	13 63	10	Nat 1320	180		Stacked
Rowan Intl/Barge 4	B	13 63	10	Nat 1625DE	300	22	Stacked

LOUISIANA-NEW IBERIA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
CRC Mallard Well/Mallard 42	P	10 00		Wils 65	140		Stacked
CRC Mallard Well/Mallard 43	P	10 00		Wils 65	140		Stacked
Loffland Bros/Barge 143	B	10 00	5	MC U1220	220		Stacked
Loffland Bros/Barge 153	B	10 00	5	Beth 1013	150		Stacked
Loffland Bros/Barge 154	B	10 00	5	MC U1220	220		Stacked
Nicklos Drlg/27	P			Nat 110UE	160		Stacked
Nicklos Drlg/82	P			Olwl E2000	200		Stacked
Phoenix Management/#3-The Mr Ray	B	10 63	10	G-D 2100E	300	8 5	Stacked

LOUISIANA-PLAQUEMINES

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Pacific Marine/7	B	13 63	10	Olwl 2000	250	20	
Bay Drlg/Gibbens	B	10 00	5	Nat 130	180	10	
Glendel Drlg/Mr Carl #3	B	13 63	10	S/B NE12	250	12	Drilling
Noble Drlg/26	P	13 63	10	Nat 1320UE	200		Drilling
Phoenix Management/Big Foot One	JU	10 63	10	G-D 2100E	250	85	Drilling
Pool Offshore Serv/14 Workover	B	6.00		Wils Super 38			Drilling
Rebstock Drlg/3	B	10 00	5	G-D 800	130	12	Stacked
Rio Grande Drlg/4	B	13.63	10	Nat 1320M	250	14	Stacked
Shank Drlg Dean/DS-2	B	10 00	5	Wils 150-2000	180	10	Drilling
Two R Drlg/Two R-10	B			Nat 1320M	200	10	Drilling
Two R Drlg/Two R-14	B			Wils 250	250	20	Drilling
Two R Drlg/Two R-15	B			C-E C3	250	10	Drilling
Two R Drlg/Two-18	B			C-E C3	250	12	Drilling
Two R Drlg/17	B			C-E CEC3	250	22	Drilling

LOUISIANA-SABINE PASS

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Ocean Drlg & Expl/Gulftide	JU	13 63	10	Nat 1625DE	250	250	Stacked
Ocean Drlg & Expl/Ocean Queen	SS	13 63	5	C-E A1500	250	1200	Stacked
Ocean Drlg & Expl/Ocean Rover	SS	13.65	10	C-E C3 Type II	250	600	Drilling
Ocean Drlg & Expl/Ocean Traveler	SS	13 63	10	Nat 1625DE	250	600	Stacked
Ocean Drlg & Expl/Odeco Seven -	S	13 63	5	Idco E2500	250	35	Stacked
Rowan Co/Rowan Midland	SS	13 63	10	Nat 1625	250	600	Stacked
Zapata Offshore/Intrepid	JU	13 63	10	Unit U1220B	200	300	Stacked

LOUISIANA-SHIP SHOAL

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Chiles Drlg/Gulfwind	JU	13 63	10	Nat 1320UE	180	150	Drilling
Dixilyn-Field Drlg/77 Gulf of Mexico	S	13 63	10	Nat 1625DE	300	85	Drilling
Dixilyn-Field Drlg/84 Gulf of Mexico	JU	13 63	10	Nat 1320UE	200	250	Drilling
Dixilyn-Field Drlg/85 Gulf of Mexico	JU	13 63	10	Nat 1320UE	200	200	Drilling
Griffin-Alexander Drlg/G-A VI	JU	13 63	10	MC EB1220	250	200	Drilling
Keydril/Aleutian Key	SS	18 75	10	Olwl E3000	300	3000	Drilling
Keyes Offshore/Keyes - 150	JU	13 63	10	C-E C1	160	150	Drilling
Keyes Offshore/Keyes - 301	JU	13 63	10	C-E 2000	200	300	Drilling
Marine Drlg/J Storm XIV	JU	13 63	10	Nat 1320	200	200	Drilling
Ocean Drlg & Expl/Ocean Driller	SS	13 63	10	C-E C2	250	600	Stacked
Ocean Drlg & Expl/Ocean Explorer	SS	13 63	5	C-E EDES	250	600	Drilling
Ocean Drlg & Expl/Ocean Pride	JU	13 63	5	Nat 110	250	152	Drilling
Penrod Drlg/31	P	13 63	10	Nat 110UE	165	300	Drilling
Penrod Drlg/35	P	13 63	10	Nat 1320UE	165	300	Drilling
Penrod Drlg/60	JU	13 63	10	C-E C3	300	330	Drilling
Transworld Drlg/54	S	13 63	5	C-E B3661	200	175	Drilling
Zapata Offshore/Rig 8	P	13 63	5	C-E A1100E	150		Drilling

LOUISIANA-SOUTH MARSH ISLAND

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Griffin-Alexander Drlg/G-A VII	JU	13 63	10	MC EB1220	250	250	Drilling
Huthnanco Drlg/Acadian Spirit	JU	13 63	10	C-E C2	250	112	Drilling

UNITED STATES (Cont'd)

LOUISIANA-SOUTH MARSH ISLAND (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Phoenix Management/Big Foot Two	JU	10 63	10	G-D 2100E	250	85	Drilling
Teledyne Movible Offshore/5	P	13 63	5	Nat 1320UE	200/5"		Stacked

LOUISIANA-SOUTH PASS

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Bokenkamp Drlg/Rig #2	P	13 63	10	Olwl E2000	250		Drilling
Booker Drlg/30	P	6 00	5	G-D 500			Drilling
Dual Drlg/12	P	13 58	10	C-E C2	250		Drilling
Dual Drlg/39	P	13 63	10	Olwl E3000	300		Drilling
Helmerich & Payne Intl Drlg/101	P	13 63	5	Nat 110UE	200		Drilling
Huthnance Drlg/14	P	13 63	10	MC U1220	250		Drilling
Huthnance Drlg/15	P	13 63	5	MC U1220	250		Drilling
Penrod Drlg/38	P	13 63	10	Nat 1320UE	250	300	Drilling
Teledyne Movible Offshore/2	S	13 63	5	Nat 1625DE	200/5"	70	Drilling
Transworld Drlg/65	S	13 63	10	C-E C3 Type II	250	70	Drilling

LOUISIANA-SOUTH PELTO

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Ocean Drlg & Expl/Ocean Chief	JU	13 63	5	C-E A1500	250	224	Drilling
Penrod Drlg/201	S	13 63	10	Nat 1320UE	250		Drilling

LOUISIANA-SOUTH TIMBALIER

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Booker Drlg/6	P	2 50	5	G-D 3000			Drilling
Dual Drlg/16	P	13 58	5	Nat 1320UE	250		Drilling
Fluor Drlg Serv/Mr Sam #55	JU	13 63	10	G-D 1500RE	250	155	Drilling
Fluor Drlg Serv/Mr Si #60	JU	13 63	10	Nat 1625DE	300	350	Drilling
Houston Offshore Intl/Sabine IV	JU	13 63	10	Nat 1320UE	200	200	Drilling
Marine Drlg/J Storm XI	JU	13 63	10	Nat 1320	200	200	Drilling
Ocean Drlg & Expl/Ocean Patriot	JU	13 63	10	Nat 1320ME	250	152	Drilling
Penrod Drlg/36	P	13 63	10	Nat 1320UE	300	300	Drilling
Penrod Drlg/70	SS	13 63	10	Nat 1625DE	300		Drilling
Penrod Drlg/75	SS	13 63	10	Nat 1625DE	300	2000	Drilling
Reading & Bates/Randolph Yost	JU	13 63	10	Olwl E3000	200	300	Contracted
Service Equipment & Engrg/7	P	10 00		OIME 750	100		Drilling
Service Equipment & Engrg/14							Drilling
Transworld Drlg/62	JU	13 63	10	C-E C3 Type II	250	300	Drilling

LOUISIANA-ST BERNARD

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Glendel Drlg/Mr George #8	B	13 63	10	G-D 3000	300	25	Stacked
Quarles Drlg/20	B	11 00	10	Idco E3000	250	18	Drilling

LOUISIANA-ST JOHN THE BAPTIST

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Map Drlg/1	B	7 06	5	Olwl 66	110	8	Drilling

LOUISIANA-ST MARTIN

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Shank Drlg Dean/DS-3	B	10 00	5	Beth B3661	250	12	Drilling
Temple Drlg/Tejas	B	13 63	10	Idco E3000	300	18	Drilling
Two R Drlg/Two R-16	B			C-E C3	250	12	Drilling

LOUISIANA-ST MARY

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Pacific Marine/16							
Bay Drlg/Matagorda Bay	B	10 00	5	C-E BL3661	250	14	
Bay Drlg/Mr Harvy	B	10 00	5	Nat 1625M	250	12	
Cactus Intl/101	P	13 63	5	C-E Electrohoist II	250		Stacked
Cactus Intl/102	P	13 63	5	C-E C2	250		Stacked
Cactus Intl/162	P	13 63	5	C-E A1500	250		Stacked
Cactus Intl/163	P	13 63	5	C-E Electrohoist II	250		Stacked
Diamond M/42	BP	13 63	5	Olwl 2000	250	18	Stacked
Diamond M Drlg/95	P	13 63	5	Olwl E2000	200		Stacked
Dolphin Titan Intl/101	JU	6 00	5	Idco H35D	150	10-70	Stacked
Dolphin Titan Intl/104	JU	10 00	5	Idco H35D	150	70	Stacked
Dolphin Titan Intl/122	P	13 63	5	Nat 110UE	160		Stacked
Dolphin Titan Intl/123	P	13 63		Idco E1700	200		Stacked
Dolphin Titan Intl/124	P	13 63	5	MC U1220EB	200		Stacked
Dolphin Titan Intl/126	P	13 63	5	MC U1220EB	200		Stacked
Dolphin Titan Intl/127	P	13 63	10	C-E C3 Type II	250		Stacked
Noble Drlg/24	P	13 63	10	Nat 1625DE	250		Drilling
Quarles Drlg/22	B	11 00	10	Olwl E3000	300	23	Drilling
Rebstock Drlg/2	B	10 00	5	Nat N80	140	12	Stacked
Rebstock Drlg/4	B	13 63	5	Olwl 860	180	12	Stacked

LOUISIANA-TERREBONNE

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Pacific Marine/14	B	13 63	5	Olwl E2000	250	13	
Bay Drlg/St John	B	10 00	5	Nat 1625M	250	11	
Cliffs Drlg/3	B	13 63	10	MC U1220EB	300	7 6-18	En Route
Cliffs Drlg/4	B	13 63	10	MC U1220EB	300	7 6 18	Stacked
Goldrus Marine Drlg/Goldrus Marine 1	B	13 63	10	Olwl 3000E	300	20	Completion
Mayronne/M-162	P	13 63	10	Nat 1320UE	200		Stacked
Mayronne/M-172	P	13 63	10	Nat 1320UE	200		Stacked
Two R Drlg/Two R-1	B			Beth B3661	250	10	Stacked
Two R Drlg/Two R-12	B			Nat 1625UE	250	12	Drilling
Two R Drlg/19	B			C-E C3	250	12	Drilling

LOUISIANA-VERMILION

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atlantic Pacific Marine/8	B	13 63	10	Olwl 2000	250	20	
Atlantic Pacific Marine/10	B	13 63	10	Olwl E2000	250	20	
Broughton Drlg/Broughton II	JU	13 63	10	Olwl E3000	300	105	Drilling
Chiles Drlg/Gulfstream	JU	13 63	10	Nat 110UE	180	150	Drilling
CRC Mallard Well/45		10 00		Wils 65	80		Drilling
Diamond M/Barge 40	B	10 00	5	Olwl 2000	250	12	Drilling
Glendel Drlg/Mr Glen #1	B	13 63	10	S/B NE12	250	12	Drilling
Griffin-Alexander Drlg/G-A II	JU	13 63	10	MC EB1200	250	200	Drilling
Nordrill Intl/Gulfdrill	JU	13 63	10	C-E C3	250	150	Drilling
Penrod Drlg/Barge 47	B	13 63	10	C-E A1500E	250	16	Drilling
Penrod Drlg/63	JU	13 63	10	Nat 1320UE	250	250	Drilling
Quarles Drlg/23	B	13 63	10	Olwl E3000	300	28	Drilling

UNITED STATES (Cont'd)

LOUISIANA-VERMILION (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Temple Drlg/Cheyenne	JU	13 63	10	Olwl E2500	250	200	Drilling
Temple Drlg/Comanche	JU	13 63	10	Olwl E2000	250	150	Drilling
Transworld Drlg/70	S	13 63	10	Olwl E3000	250	100	Drilling

LOUISIANA-WEST CAMERON

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Cactus Intl/104	P	13 63	5	C-E Electrohoist II	250		Drilling
Chiles Drlg/Platform Rig II	P	13 63	10	Nat 1320UE	200		Drilling
Chiles Drlg/Yucatan	JU	13 63	10	Nat 1625DE	250	300	Drilling
Houston Offshore Intl/Sabine I	JU	13 63	10	Nat 1320UE	200	200	Drilling
Houston Offshore Intl/Sabine III	JU	13 63	10	Nat 1320UE	200	200	Drilling
Huthnance Drlg/Charger I	JU	21 25	2	MC U1220EB	250	150	Drilling
Huthnance Drlg/Charger II	JU	13 63	10	MC U1220EB	250	150	Drilling
Marine Drlg/J Storm XV	JU	13 63	10	Nat 1625M	250	250	Drilling
Nordrill Intl/Nordrill Falcon	JU	13 63	10	C-E C2	250	200	Drilling
Ocean Drlg & Expl/St Louis	S	13 63	5	C-E EDES	250	30	Drilling
Penrod Drlg/86	JU	13 63	10	Nat 1320UE	250	250	Drilling
Penrod Drlg/88	JU	13 63	10	Nat 1320UE	250	250	Drilling
Penrod Drlg/90	JU	13 63	10	Nat 1320UE	250		Drilling
Penrod Drlg/203	S	13 63	10	Nat 1320UE	250		Drilling
Pool Offshore Serv/903 Workover	P	2 50	5	Wils Super			Drilling
Salen Protexa Drlg/Salenergy V	JU	13 63	10	MC U1220BE	200	250	Drilling
Salen Protexa Drlg/Zapoteca	JU	13 63	10	MC U1220BE	200	250	
Service Equipment & Engrg/3	P	10 00		Cbot 1287			Drilling
Teledyne Movible Offshore/Rig 20	JU	13 63	10	C-E C3 Type 2	300/5"	250	Stacked
Teledyne Movible Offshore/18	JU	13 63	10	MC U1220EB	250	250	Stacked
Teledyne Movible Offshore/19	JU	13 63	10	C-E C3 Type 2	300/5"	250	Drilling
Transworld Drlg/64	JU	13 63	10	Olwl E3000	250	300	Drilling

LOUISIANA-WEST DELTA

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Bokenkamp Drlg/Rig #4	P	13 63	10	Olwl E2000	250		Drilling
Booker Drlg/10	P	10 00	5	G-D 3000			Drilling
Booker Drlg/140	P	6 00	5	G-D 500			Drilling
Dixilyn-Field Drlg/76 Gulf of Mexico	S	13 63	10	S/B N12A	200	80	Drilling
Fluor Drlg Serv/Mr Dave #61	JU	13 63	10	Nat 1320UE	200	250	Drilling
Fluor Drlg Serv/Mr Gus II #51	JU	13 63	5	Nat 160E	250	150	Drilling
Marine Drlg/J Storm IV	JU	13 63	10	Nat 1625M	250	250	Drilling
Marine Drlg/J Storm XVI	JU	13 63	10	Nat 1320	200	250	Drilling
Penrod Drlg/89	JU	13 63	10	Nat 1320UE	250		Drilling
Pool Offshore Serv/17 Workover (Concentric)	P	2 50	5	Wils Super 38			Drilling
Teledyne Movible Offshore/17	JU	13 63	10	C-E C3 Type 2	300/5"	250	Stacked

MISSISSIPPI-UNDESIGNATED

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Ocean Drlg & Expl/Ocean Scout	SS	13 63	10	C-E C3 Type II	250	600	Stacked

TEXAS-UNDESIGNATED

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Atwood Oceanics Pacific/Vicksburg	JU	13 63	10	C-E C2	200/5"	300	Drilling
Blocker Drlg & Marine/Trinity Bay	B	13 63	10	Idco E3000	300		Stacked
Cliffs Drlg/Jack-up #2	JU	13 63	10	Nat 1320UE	250	17/155	Drilling
CRC Mallard Well/Barge 5	B			Nat 80B	110		
CRC Mallard Well/11	B	6 00	5	Wils 90	120	14	
CRC Mallard Well/16	B	10 00	5	Wils 90	120	14	
Diamond M/97	P	13 63	10	Olwl E2000	200		Drilling
Dolphin Titan Intl/125	P	13 63	5	Nat 1320UE	200		Drilling
JFP Well Serv/JFP Five	JU	13 63	10	Olwl E2000	250/5"	120	Drilling
Marine Drlg/J Storm X	JU	13 63	10	Nat 1320	200	250	Stacked
Marlin Drlg/Marlin No 6	JU	13 63	10	Nat 1625DE	300	300	Drilling
Marlin Drlg/Marlin 3	JU	13 63	10	Nat 1625DE	250	250	Drilling
MGF Drlg/37	B	6 00	5	G-D 500	90	8-10	Stacked
Noble Drlg/29	P	13 63	10	Olwl E2000	200		Drilling
Penrod Drlg/37	P	13 63	10	C-E C2	250	300	Stacked
Penrod Drlg/40	B	13 63	10	Nat 1625DE	300	20	Stacked
Penrod Drlg/41	B	13 63	10	Nat 1625DE	300		Stacked
Penrod Drlg/42	B	13 63	10	Nat 1625DE	300	20	Stacked
Penrod Drlg/49	B	13 63	10	Nat 1625DE	300	20	Stacked
Penrod Drlg/50	S	13 63	10	C-E A1500E	250	50	Stacked
Penrod Drlg/53	JU	13 63	10	Nat 1625DE	300	300	Stacked
Penrod Drlg/54	JU	13 63	10	Nat 1625DE	300	300	Stacked
Penrod Drlg/55	JU	13 63	10	Nat 1625DE	300	150	Stacked
Penrod Drlg/56	JU	13 63	10	Nat 1625DE	300	150	Stacked
Penrod Drlg/57	JU	13 63	10	Nat 1625DE	300	150	Stacked
Penrod Drlg/58	JU	13 63	10	Nat 1625DE	300	210	Stacked
Penrod Drlg/59	JU	13 63	10	Nat 1625DE	300	220	Stacked
Penrod Drlg/61	JU	13 63	10	C-E C3	300	340	Stacked
Penrod Drlg/74	SS	13 63	10	Nat 1625DE	300	1700	Stacked
Penrod Drlg/83	JU	13 63	10	Nat 1320DE	250	250	Stacked
Penrod Drlg/65 Mobil	JU	13 63	10	C-E C3	300	210	Stacked
Pool Offshore Serv/24	B	11 00	5	Wils Super Giant	120	12	Drilling
Pool Offshore Serv/22 (Drilling)	B	11 00	5	Wils Super Giant	120	12	Drilling
Rowan Co/Rowan Odessa	JU	13 63	10	Nat 1625	250	300	Drilling
Rowan Co/Rowan-Texas	JU	13 63	10	Nat 1320UE	250	225	Drilling
Salen Protexa Drlg/Salenergy I	JU	13 63	10	MC U1220EB	200	250	Stacked
Sedco Underseas Drlg/Sedco 471	DS	16 75	10	Olwl E3000	250	6000	Stacked
Western Oceanic/Western Triton III	JU	13 63	10	C-E C2	200	250	Drilling

TEXAS-BRAZOS

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Fluor Drlg Serv/Rig 62	P	13 63	10	Nat 1320UE	200		Drilling
Keyes Offshore/Keyes - 200	JU	13 63	10	C-E C2	200	200	Drilling
Marine Drlg/J Storm XVIII	JU	13 63	10	Nat 1320M	250	250	Drilling
Zapata Offshore/Zapata Explorer	JU	13 63	10	Olwl 3000E	250	240	Drilling

TEXAS-BROWNSVILLE

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
Rowan Intl/Rowan Anchorage	JU	13 63	5	Nat 1320UE	250	225	En Route
Rowan Intl/Rowan-New Orleans	JU	13 63	5	Nat 1324UE	250	225	En Route

UNITED STATES (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
TEXAS-CALHOUN							
Rio Grande Drlg/1	B	13 63	5	Nat 110M	180	14	Drilling
TEXAS-CHAMBERS							
Dixilyn-Field Drlg/Barge 51	B	10 00	5	Nat 110	180	10	Drilling
TEXAS-EAST BREAKS							
Service Equipment & Engrg/15							Drilling
TEXAS-GALVESTON							
Marine Drlg/J Storm I	JU	13 63	10	Nat 130	200	225	Drilling
TEXAS-HIGH ISLAND							
Cactus Intl/165	P	13 63	5	Olwl E2000	250		Drilling
CRC Mallard Well/44	P	10 00		Wils 65	140		Drilling
CRC Mallard Well/46		13 63		Wils 65	125		Drilling
Fluor Drlg Serv/Mr Mel #59	JU	13 63	10	Nat C1625DE	300	350	Drilling
Houtech Drlg/Houtech JU-II	JU	11 25	10	G-D 700M	100	73	Drilling
Houtech Drlg/Houtech JU-III	JU	11 25	10	G-D 700M	100	73	Drilling
Huthnance Drlg/Rig No 11	P	13 63	5	MC U1220	250		Drilling
Loffland Bros/76	P	13 63	5	MC U1220BE	220		Drilling
Penrod Drlg/32	P	13 63	10	Nat 1320UE	250	250	Drilling
Penrod Drlg/68	JU	13 63	10	Nat 1625DE	300	330	Drilling
Penrod Drlg/87	JU	13 63	10	Nat 1320UE	250		Drilling
Penrod Drlg/66 Mobile	JU	13 63	10	Nat 1625DE	300	210	Drilling
Reading & Bates/Geo M Reading	PT	13 63	10	Idco M2500	200		Drilling
Service Equipment & Engrg/9	P	10 00		OIME 750	100		Drilling
Service Equipment & Engrg/10	P	10 00		OIME 750	100		Drilling
Teledyne Movible Offshore/4	P	13 63	5	Nat 110UE	160/ 5''		Drilling
Temple Drlg/Apache	JU	13 63	10	Olwl E3000	250	55	Workover
TEXAS-HOUSTON							
Skinner Marine Operations/Skinmar II	P	13 63	5	Olwl E2000	200	185	Stacked
Skinner Marine Operations/Skinmar III	P	13 63	5	Olwl E2000	200	185	Stacked
TEXAS-INGLESIDE							
Glendel Drlg/1-Bill Bailey	JU	13 37	10	MC U914EC	180	110	Stacked
Ocean Drlg & Expl/Ocean Champion	JU	13 63	10	Nat 1625DE	250	250	Stacked
Ocean Drlg & Expl/Ocean Conquest	JU	13 63	10	C-E C2	250	250	Stacked
TEXAS-JEFFERSON							
Nordrill Intl/Fjelldrill	JU	13 63	10	Nat 1625UE	250	250	Stacked

UNITED STATES (Cont'd)

Contractor And • Rig Name or No.	Type •	BOP Stack Size (ID) •	BOP Stack Pressure Rating, 1,000 psi •	Drawworks Make And Model •	Rated Depth With 4½-in. Pipe, 100 ft. •	Rated Water Depth •	Status •
TEXAS-MATAGORDA							
Marine Drlg/J Storm III	JU	13.63	10	Nat 1625M	250	250	Drilling
Marine Drlg/J Storm IX	JU	13.63	10	Nat 1320	200	195	Drilling
Ocean Drlg & Expl/Ocean Viking	SS	13.63	10	C-E A1500	250	600	Drilling
TEXAS-MATAGORDA ISLAND							
Griffin-Alexander Drlg/G-A V	JU	13.63	10	MC EB1220	250	200	
Houston Offshore Intl/Nueces I	JU	13.63	10	Nat 1320UE	160	115	Drilling
Houston Offshore Intl/Sabine II	JU	13 63	10	Nat 1320UE	200	200	Drilling
Loffland Bros/79	P	13 63	5	MC U1220BE	220		Drilling
Noble Drlg/Ed Holt	JU			Olwl E3000	250		Drilling
Penrod Drlg/30	P	13 63	10	Nat 1320UE	250	250	Drilling
Service Equipment & Engrg/21	P	13 63	1	Idco 2100	2500		Drilling
Zapata Offshore/Rig 34	P			Idco E3000			Drilling
TEXAS-MUSTANG ISLAND							
Broughton Drlg/Broughton I	JU	13 63	10	Olwl E3000	300	105	Drilling
Cliffs Drlg/Cliffs LaSalle	JU	13 63	10	Nat 1320UE	250	17/ 135	Drilling
Nicklos Drlg/81	P			Nat 1320UE	200		Drilling
Teledyne Movible Offshore/16	JU	13 63	10	C-E C3 Type 2	300/ 5''	250	Drilling
TEXAS-NUECES							
Cliffs Drlg/2	B	13 63	10	MC U1220EB	300	7'6-18	Stacked
Dixilyn-Field Drlg/50 Gulf of Mexico	B	10 00	5	Nat 130	200	8	Drilling
Glendel Drlg/Mr Del #2	B	13 63	10	S/B NE12	250	20	Drilling
TEXAS-PORT ARANSAS							
Atlantic Pacific Marine/Gulf Commander	JU	13 53	5	C-E A800WE	140	100	
TEXAS-SABINE PASS							
Nordrill Intl/Nordrill Steeler	JU	13 63	10	C-E C3	250	200	Standby
Santa Fe Drlg/Blue Water No 2	S	13 63	10	Nat 1625DE	250	55	Stacked
Santa Fe Drlg/Blue Water No 4	SS	16 75	10	C-E C3	250	1500	Stacked
Santa Fe Drlg/Choctaw I	SS	18 75	10	Nat 1320UE	200	800	Stacked
Santa Fe Drlg/Mariner 3	SS	16 75	10	Olwl E2000	200	600	Stacked
VIRGINIA-UNDESIGNATED							
Sonat Offshore Drlg Inc Group/Discover Seven Seas	DS	16 75	10	C-E C3 Type II	250	7500	Drilling
WASHINGTON-SEATTLE							
Ocean Drlg & Expl/Ocean Odyssey	SS	18 75	15	C-E C3		1500	Stacked

Drawworks Manufacturers Abbreviations

Bethlehem Supply Co.	Beth	Lee, Harold Engineering	Lee
Bucyrus-Erie Co.	B-E	Mayhew Supply Co Inc.	May
Cabot Corp Machinery Div.	Cbot	Mid-Continent Supply	MC
Cardwell Mfg. Co.	Crdw	National Supply Co.	Nat
Challenger	Chal	OIME	OIME
Continental Emsco	C-E	Oilwell Div. (U.S. Steel)	Olwl
Cooper Mfg. Corp.	Coop	OPI Pump Div.	OPI
DeMag Mfg. Co.	DeMg	Quincy Mfg.	Quin
Ellis-Williams	E-W	Salzgitter Maschinen Mfg. Co.	Salt
Ewbank Mfg. Div. Inc.	Ewb	Skytop Brewster	S B
George E. Failing Co.	Fail	Spencer-Harris Machine & Tool Co.	S-H
Foramines	Fora	Superior	Sup
Gardner-Denver	G-D	Tri Service Mfg. Co.	TSM
Hacker Machine & Supply Co.	Hack	Wagner-Morehouse Inc.	W-M
Haniel & Lueg	H-L	Walker-Neer Mfg. Co. Inc.	W-N
Hooper Machine Works Inc.	Hoop	Weiss Corp.	Weis
Houston Systems	HS	Wheland Co.	Whln
Howard-Turner Machine Works	HT	Wichtex Machinery Co. Inc.	Wich
Ideco Inc.	Idco	Wilson Mfg. Co. Inc.	Wils
Ingersoll-Rand Co.	I-R	Worth Co.	Worth
Joy Mfg. Co.	Joy		
Justiss-Mears Oil Co.	J-M		

* * *

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Linda Hietala ... Offshore Rig Locator Coordinator

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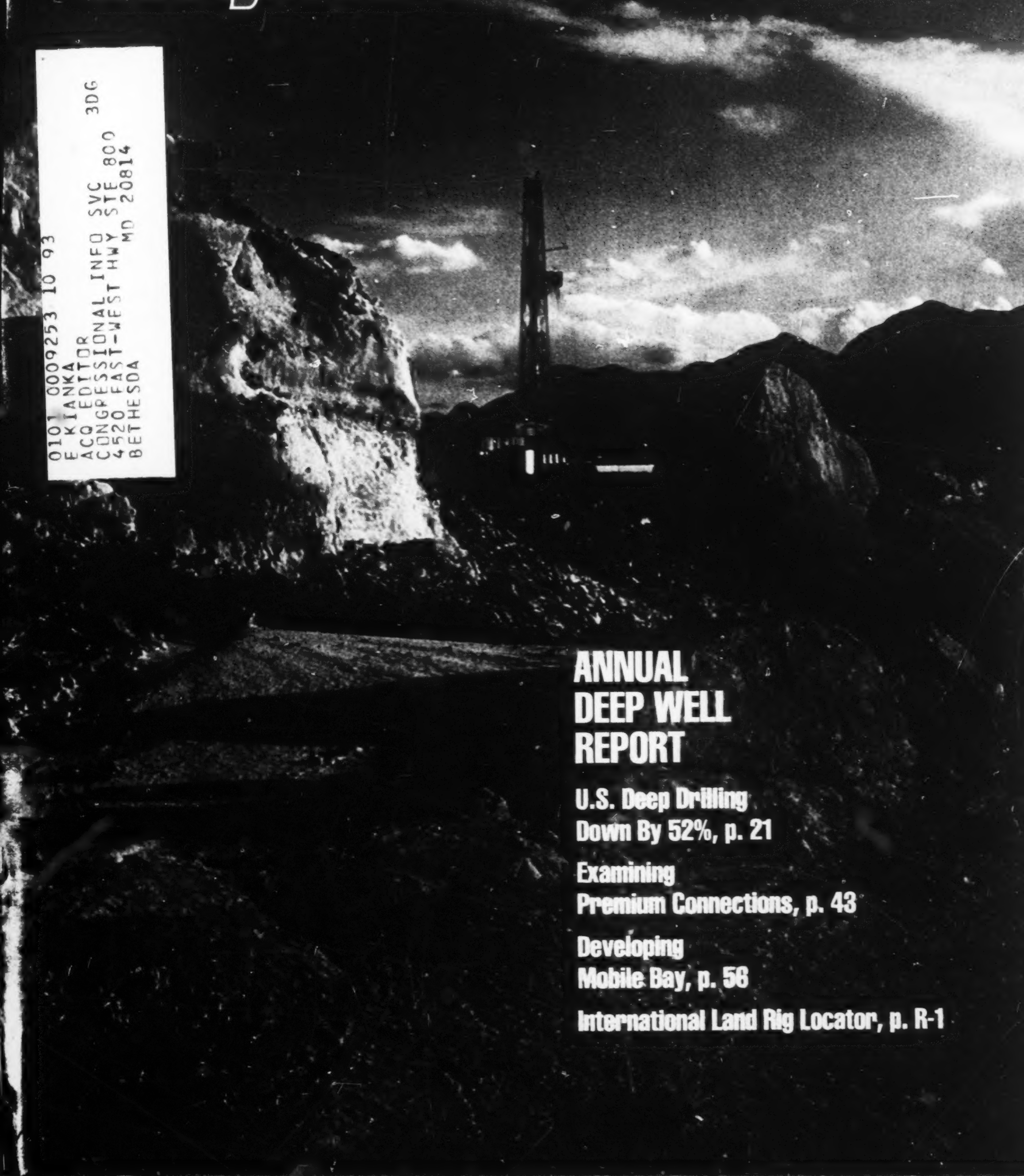

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Drilling Decline May Be Traditional Slump

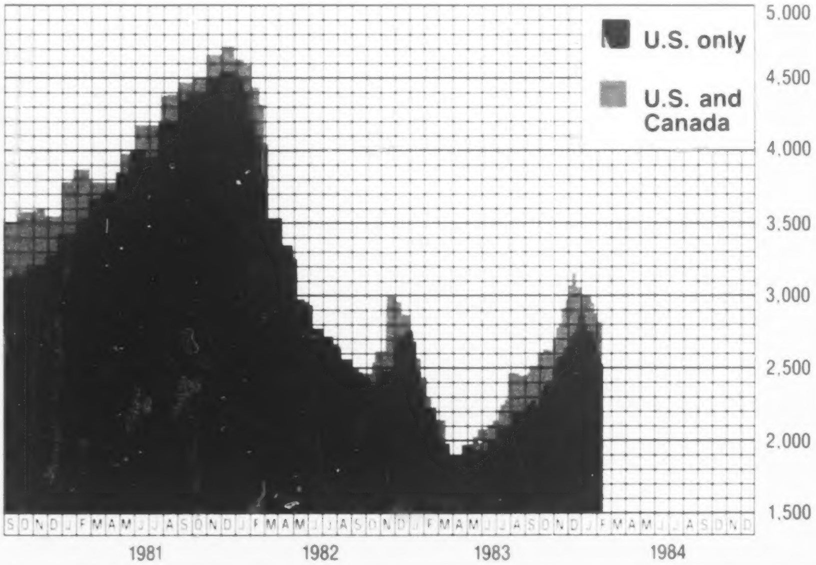
Everybody's got time for the waiting game this year as far as Hughes Tool Co.'s rotary rig count is concerned. As of early February, U.S. rig activity appeared to be at about the midway mark in its traditional springtime slump. And rig watchers were patiently waiting to see if this year's slump really is traditional. If so, and if the count shows solid advances during April, it could mean a return to near normalcy for U.S. drillers. Not to the boom days of 1980 and 1981, of course, but to the conventional drilling years in which peak activity occurs during December after having steadily improved since springtime.

If the count doesn't start moving up soon, it could signal a return to the unconventional pattern of 1982. So, it's easy to see why rig watchers this year are waiting a bit before readjusting their 1984 predictions.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Jan. 16, 1984	Jan. 23, 1984	Jan. 30, 1984	Feb. 6, 1984
Alabama				
Land	15	17	13	12
Inland Waters	1	0	0	0
Offshore	0	1	1	1
Alaska				
Land	8	11	11	11
Offshore	5	3	4	3
Total	13	14	15	14
Arkansas	33	36	29	22
California				
Land	82	74	74	67
Offshore	23	21	21	21
Total	105	95	95	88
Colorado	61	59	54	48
Florida	8	8	8	7
Georgia	1	1	1	1
Idaho	1	1	1	1
Illinois	45	47	48	41
Indiana	7	2	5	6
Kansas	141	136	133	125
Kentucky	6	9	7	7
North Louisiana	35	33	31	32
South Louisiana				
Inland Waters	55	57	58	54
Land	116	109	111	106
Offshore	145	137	145	143
Total	351	336	345	335
Michigan	40	38	37	35
Mississippi	32	37	41	39
Montana	48	45	39	40
Nebraska	12	11	7	8
Nevada	1	1	0	0
New Jersey	1	1	1	0
New Mexico	77	78	76	67
New York	13	16	15	13
North Dakota	63	58	49	49
Ohio	59	55	56	55
Oklahoma	389	408	384	364
Pennsylvania	29	29	29	28
South Dakota	2	2	2	2
Tennessee	1	2	1	1
Texas				
Offshore	43	42	38	41
Inland Waters	5	6	5	4
Dist. 1-S. Central Tex.	22	20	19	21
Dist. 2-Middle Tex. Coast	54	52	47	50
Dist. 3-Upper Tex. Coast	116	113	110	109
Dist. 4-Lower Tex. Coast	92	94	87	92
Dist. 5-Northeast Tex.	23	31	31	32
Dist. 6-Far Northeast Tex.	80	75	79	79
Dist. 7B-N. Central Tex.	56	56	57	55
Dist. 7C-W. Central Tex.	70	71	68	61
Dist. 8-Far West Tex.	140	138	142	142
Dist. 8A-West Tex.	73	68	55	62
Dist. 9-North Tex.	75	74	76	84
Dist. 10-Tex. Panhandle	57	60	55	56
Total	906	900	869	888
Utah	48	54	50	47
Virginia	0	0	1	2
Washington	1	1	1	1
West Virginia	37	34	33	30
Wyoming	129	122	124	138
Total U.S.	2,675	2,654	2,569	2,516
Canada	280	288	289	293
Canada-Offshore	12	13	14	14
U.S. and Canada	2,956	2,955	2,872	2,823



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ABOUT THE COVER: Rig 119 drills for Coastal Oil and Gas Co. in Wyoming's Wind River Basin. For details on all deep drilling last year, see page 21. (Photo courtesy of Loffland Brothers Co.)

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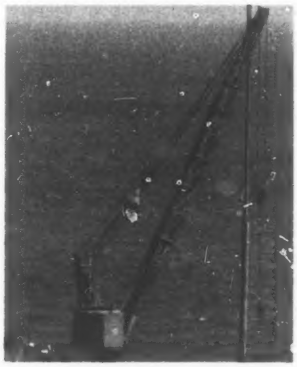
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Mechanical specifications, ratings, locations, and status are listed for each of the 5,000 contract rotary drilling rigs operated by the more than 700 independent drilling contractors throughout the Free World.

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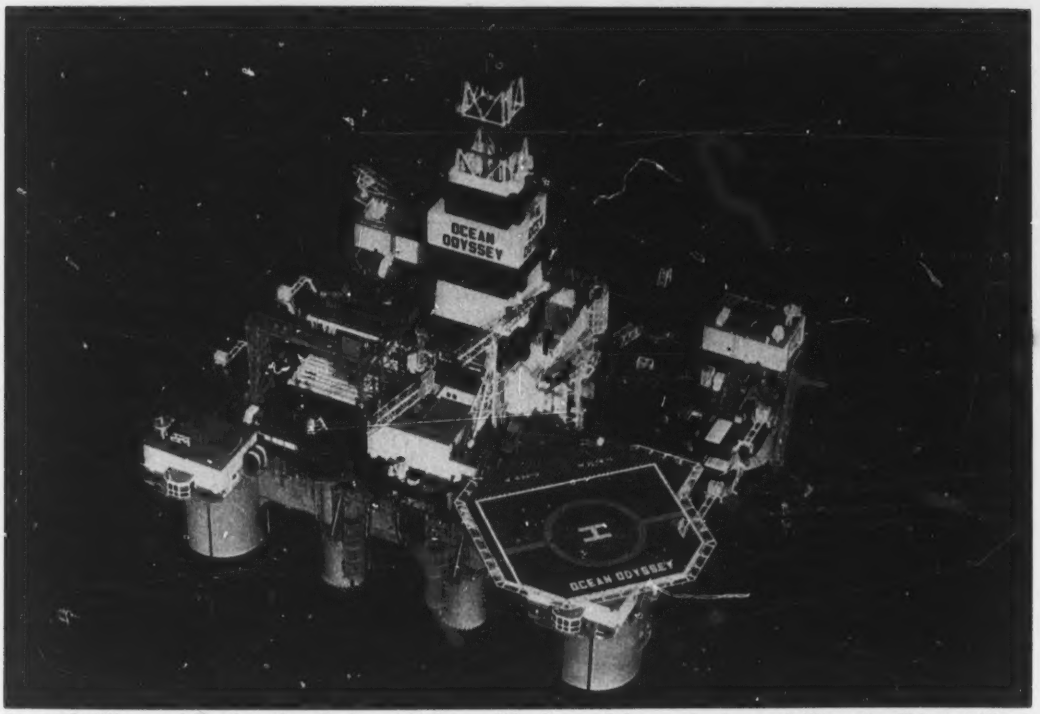


Ocean Drilling and Exploration Co.'s semisubmersible Ocean Odyssey is shown drilling the Yakutat No. 1 wildcat for ARCO Exploration Co. in the Gulf of Alaska. The well was drilled to total depth of 17,810 ft.

Deep Drilling In U.S. Declines By 52% In 1983

by Rich McNally, *Associate Editor*, and Laura Jacobus, *Assistant Editor*

Deep drilling came back to the real world in 1983 after having soared to an all-time high during 1982 in defiance of that year's record drop in U.S. rotary rig activity.

Last year's total of 577 wells drilled to 15,000 ft or deeper in the U.S. represents a 52% decline from the previous year's total of 1,205 deep completions. It is the sharpest drop in the history of deep drilling, and the 628-well difference between 1982 and 1983 would be a higher total than for any year but the previous 3 in the 40-year history of PETROLEUM ENGINEER INTERNATIONAL's computerized Deep Well Report. Nevertheless, the 577 deep completions put 1983 in sixth place on the all-time high list. The bad news is that they brought to an end a string of 7 consecutive years in which U.S. deep well completions had risen steadily.

Completions, for the purposes of the Annual Deep Well Report, are defined as wells that reach total depth of 15,000 ft or more during the year, regardless of whether production equipment has been installed. Some of the wells listed as dry holes, therefore, are still being tested as of this writing. As a result, their classifications could change when final test results are in.

The big three among deep drilling states – Texas, Oklahoma, and Louisiana – contributed 1,000 completions to 1982's total. That was 83% of all deep wells drilled during the year. During 1983, the same three states accounted for 471 deep wells, or 82% of the total. Oklahoma, where Anadarko Basin drilling is one of the major casualties of the nation's current natural gas glut, led the decline with a drop of 349 deep completions for a 71% loss that is far above the national average. Texas deep drilling declined by 97 wells (46%), and Louisiana was off by 83 (39%).

Some 142 of Oklahoma's deep wells were drilled in the Anadarko Basin of western Oklahoma, and the other two were drilled in Latimer County. That's in the Arkoma Basin area of eastern Oklahoma and northern Arkansas, and it accounted for three deep wells in 1982 (one of them in Arkansas). So, virtually all of Oklahoma's deep well decline last year occurred in the Anadarko, where 2 and 3 years ago big rigs stood cheek by jowl in the industry's all-out effort to tap deep gas that was selling for upwards of $10/Mcf. By the end of 1982, however, the price for deep gas was closer to $5/Mcf and the national gas bubble had begun to inflate. So, Oklahoma lost its first place position to Louisiana last year, but, if it's any consolation, the state managed

	U.S.*			Alabama land			Alabama offshore		
	1981 (1,066 wells)	**1982 (1,205 wells)**	1983 (577 wells)	**1981 (27 wells)**	**1982 (27 wells)**	1983 (21 wells)	**1981 (0 wells)**	**1982 (2 wells)**	1983 (5 wells)
Averages:									
Well depth, ft	17,114	17,354	16,974	16,903	16,854	16,191		21,404	20,554
Cost/well, $000	$5,467	$6,637	$6,095	$3,116	$3,329	$2,110		$36,750	$19,406
Cost/ft	$313	$382	$353	$184	$198	$130		$1,716	$950
Mud cost/well, $000	$527	$569	$620	$262	$337	$156		$1,940	$951
Mud cost/ft	$33	$33	$37	$16	$20	$10		$91	$46
Bits/well	35	37	32	17	19	21		107	50
Ft/bit	500	466	618	981	887	974		201	432
Tubulars/well, tons	NR	NR	644	NR	NR	270		NR	1,066
Tubular cost, well, $000	NR	NR	1,475	NR	NR	$501		NR	$3,507
Success ratio	603:1,066	599:1,205	301:577	11:27	14:27	9:21		0:2	5:5
Wildcat success ratio	247:530	182:536	89:255	2:7	1:9	2:8		–	2:2
Development success ratio	356:536	417:669	212:322	9:20	13:18	7:13		0:2	3:3
Total costs, $000:									
Mud	$561,396	$685,589	$357,854	$7,081	$9,109	$3,282		$3,879	$4,756
Drilling	$4,851,856	$6,859,255	$3,026,113	$71,381	$70,907	$36,215		$66,173	$90,010
Completion	$920,532	$1,118,354	$420,970	$12,745	$18,967	$7,333		$7,327	$7,022
Total	$5,828,219	$7,997,571	$3,516,592	$84,126	$89,874	$44,302		$73,500	$97,032
Total footage	18,243,075	20,911,440	9,794,007	456,394	455,059	340,012		42,808	102,768

*Deep drilling, in this and subsequent tables, includes all wells drilled to 15,000 ft and deeper.

A deep hole is being drilled for TXO Production Corp. in the Cheyenne field near Elk City, Okla., by Loffland Brothers Co.'s Rig 218. Record-setting low temperatures hampered drilling operations throughout the state last winter, with the windchill factor reaching −35 F at one point.

to do somewhat better than the 90% decline that had been predicted by some observers.

Offshore Totals Increase

Louisiana's 214 deep wells in 1983 included 89 offshore wells, which is the most ever drilled offshore Louisiana in any one year. So, all of the Pelican State's deep drilling decline took place on land.

Texas also set a record for deep wells offshore with a total of 23 wells drilled to an average total depth of 16,573. The previous Texas high was 16 offshore completions, drilled in both 1981 and 1982. A 104-well drop onshore, therefore, is more than responsible for the Lone Star State's 97-well decline.

Alabama, the fourth most active deep drilling state last year, also set a record for offshore deep completions during 1983, with five. So, despite the overall drop in deep drilling last year, deep completions offshore actually registered a 22% increase – from 97 in 1982 to 119 in 1983. Although Deep Well Report printouts don't specifically list nationwide offshore totals, it is safe to surmise that the 119 deep wells completed offshore in 1983 probably is a record. We've spot checked 4 or 5 years during the past decade without finding any higher totals than the 97 registered in both 1981 and 1982.

In any event, last year's 119 deep offshore wells were drilled to an average total depth of 16,789 ft at a total cost of $1.4 billion. Average cost per well came to $11.7 million. Some 39 of the wells (32.8%) were completed as producers.

On a state-by-state basis, Alabama's five offshore deep wells had the highest average total depth – 20,554 ft. They cost more than $19 million apiece, but they all are producers.

Louisiana, which dominated deep drilling offshore during 1983, completed 89 wells with an average cost just under $10 million. Texas's 23 offshore deep wells averaged a slightly shallower total depth than did Louisiana's, but they cost almost $5 million more apiece to drill. Alaska's two offshore deep wells were super

	Alaska offshore			California			Colorado		
	1981 (0 wells)	1982 (0 wells)	1983 (2 wells)	1981 (5 wells)	1982 (4 wells)	1983 (2 wells)	1981 (3 wells)	1982 (0 wells)	1983 (1 well)
Averages:									
Well depth, ft			17,105	15,992	15,725	17,452	16,812		15,170
Cost/well, $000			$51,137	$3,920	$9,160	$10,475	$7,000		$4,812
Cost/ft			$3,011	$245	$583	$590	$416		$317
Mud cost/well, $000			$976	$367	$1,011	$555	$440		$350
Mud cost/ft			$57	$23	$64	$32	$26		$23
Bits/well			52	51	53	63	38		46
Ft/bit			329	311	297	310	439		330
Tubulars/well, tons			964	NR	NR	1,173	NR		1,091
Tubular cost/well, $000			$1,834	NR	NR	$2,500	NR		$875
Success ratio			0:2	0:5	2:4	1:2	1:3		1:1
Wildcat success ratio			0:2	0:5	2:4	0:1	1:2		–
Development success ratio			–	–	–	1:1	0:1		1:1
Total costs, $000:									
Mud			$1,952	$1,835	$4,043	$1,110	$1,320		$350
Drilling			$96,123	$16,825	$27,249	$16,750	$17,800		$4,637
Completion			–	$2,775	$9,391	$4,200	$3,200		$175
Total			$102,274	$19,600	$36,641	$20,950	$21,000		$4,812
Total footage			34,210	79,960	62,898	34,903	50,435		15,170

	Florida			Louisiana land			Louisiana offshore		
	1981 (7 wells)	1982 (7 wells)	1983 (9 wells)	1981 (243 wells)	1982 (221 wells)	1983 (125 wells)	1981 (81 wells)	1982 (76 wells)	1983 (89 wells)
Averages:									
Well depth, ft	16,160	15,908	16,085	17,333	17,316	17,055	16,599	16,638	16,626
Cost/well, $000	$3,499	$3,561	$3,677	$6,011	$6,760	$4,100	$8,466	$9,393	$9,742
Cost/ft	$217	$224	$219	$347	$390	$234	$510	$565	$581
Mud cost/well, $000	$199	$185	$121	$663	$675	$422	$708	$692	$1,548
Mud cost/ft	$12	$12	$8	$38	$39	$24	$43	$42	$96
Bits/well	17	17	18	34	34	26	36	34	32
Ft/bit	943	960	1,083	516	517	706	457	497	593
Tubulars/well, tons	NR	NR	447	NR	NR	635	NR	NR	798
Tubular cost, well, $000	NR	NR	$650	NR	NR	$1,461	NR	NR	$1,643
Success ratio	5:7	4:7	4:9	103:243	85:221	50:125	38:81	31:76	28:89
Wildcat success ratio	0:2	0:2	1:6	53:151	31:122	16:68	10:34	9:35	8:48
Development success ratio	5:5	4:5	3:3	50:92	54:99	34:57	28:47	22:41	20:41
Total costs, $000:									
Mud	$1,390	$1,296	$1,091	$160,998	$149,258	$52,974	$57,313	$52,610	$137,790
Drilling	$22,142	$23,275	$28,485	$1,233,607	$1,309,458	$434,834	$607,596	$620,302	$761,629
Completion	$2,352	$1,650	$3,850	$214,272	$184,201	$69,493	$73,527	$92,910	$70,469
Total	$24,494	$24,925	$33,094	$1,460,778	$1,493,867	$512,496	$685,729	$713,885	$867,039
Total footage	113,117	111,358	144,766	4,211,878	3,826,838	2,131,892	1,344,498	1,264,464	1,479,722

expensive, but one of them, the COST well, is very important to participants in next month's proposed offshore lease sale in the Navarin Basin. A 29.5-million-acre area, Navarin Basin lies 56 to 249 miles off the southeast cape of St. Matthew Island in waters that are from 230 to 9,186 ft deep. Its northwest boundary touches the dividing line between the U.S. and Russian sectors of the Bering Sea. The Minerals Management Service says that 1.2 billion bbl of oil and 7.68 tcf of natural gas could be discovered and produced in the proposed lease area.

Well Costs Down

Among data for which the Deep Well Report is most noted are cost statistics, and the good news this year is that average well costs dropped in 1983 for the first time since 1972. At that time, the average deep well was drilled to total depth of 16,963 ft. And it cost $919,484 to drill and complete.

Last year, the average deep well measured 16,974 ft deep, and its average cost was more than $6 million. Even so, that represents a half-a-million-dollar reduction in the average compared with 1982. Cost per foot was down last year by $29.

Another positive sign noted by this year's Deep Well Report is a substantial increase in footage per bit. From 466 ft/bit in 1982, U.S. deep drillers coaxed an additional 150 ft/bit during 1983. They also reversed a 4-year increase in the number of bits used per well. Last year, it was 32, which is a 14% improvement over 1982.

An addition to Deep Well Report data this year is information about tubulars. And the report finds that, last year, the average deep well consumed an estimated 644 tons of tubulars at a cost-per-well of almost $1.5 million.

Total U.S. deep drilling expenditures last year topped $3.5 billion. That's a far cry from the almost 8 billion spent in 1982. Most of the difference, of course, can be explained by the steep drop in completions

	Mississippi			Montana			New Mexico		
	1981 (127 wells)	**1982 (69 wells)**	1983 (24 wells)	**1981 (1 well)**	**1982 (0 wells)**	1983 (1 well)	**1981 (19 wells)**	**1982 (28 wells)**	1983 (13 wells)
Averages:									
Well depth, ft	17,210	17,256	16,026	17,375		16,600	16,149	15,739	15,664
Cost/well, $000	$3,607	$3,525	$1,716	$6,966		$9,700	$3,565	$3,293	$2,426
Cost/ft	$210	$204	$108	$401		$584	$221	$209	$155
Mud cost/well, $000	$340	$295	$137	$335		$640	$295	$268	$188
Mud cost/ft	$20	$17	$9	$19		$39	$18	$17	$12
Bits/well	27	25	22	100		123	24	22	21
Ft/bit	628	705	770	174		135	682	715	806
Tubulars/well, tons	NR	NR	341	NR		281	NR	NR	384
Tubular cost/well, $000	NR	NR	$449	NR		$420	NR	NR	$784
Success ratio	56:127	29:69	10:24	0:1		0:1	14:19	17:28	11:13
Wildcat success ratio	14:55	7:33	1:7	0:1		0:1	10:15	12:18	4:5
Development success ratio	42:72	22:36	9:17	–		–	4:4	5:10	7:3
Total costs, $000:									
Mud	$43,154	$20,355	$3,285	$335		$640	$5,601	$7,512	$2,441
Drilling	$381,023	$202,698	$33,706	$6,966	–	$9,700	$51,440	$78,485	$22,181
Completion	$75,009	$40,531	$7,443	–		–	$15,469	$13,432	$9,004
Total	$458,100	$243,229	$41,189	$6,966		$9,700	$67,726	$92,199	$31,541
Total footage	2,185,708	1,190,678	384,635	17,375		16,600	306,829	440,685	203,638

	Oklahoma			Texas land			Texas offshore		
	1981 (279 wells)	**1982 (493 wells)**	1983 (144 wells)	**1981 (200 wells)**	**1982 (194 wells)**	1983 (90 wells)	**1981 (16 wells)**	**1982 (16 wells)**	1983 (23 wells)
Averages:									
Well depth, ft	16,982	17,603	17,159	17,472	17,580	17,395	16,844	16,519	16,573
Cost/well, $000	$4,718	$6,193	$4,520	$5,068	$6,073	$5,500	$13,291	$13,017	$14,503
Cost/ft	$278	$352	$261	$290	$345	$311	$789	$788	$865
Mud cost/well, $000	$404	$505	$396	$545	$555	$527	$1,112	$1,155	$923
Mud cost/ft	$24	$29	$23	$31	$32	$30	$66	$70	$56
Bits/well	31	39	33	30	34	32	53	43	44
Ft/bit	543	446	549	585	514	613	321	386	396
Tubulars/well, tons	NR	NR	553	NR	NR	719	NR	NR	1,069
Tubular cost, well, $000	NR	NR	$1,204	NR	NR	$1,786	NR	NR	$3,378
Success ratio	193:279	290:493	106:144	124:200	96:194	58:90	2:16	1:16	6:23
Wildcat success ratio	56:87	68:145	21:29	71:124	40:112	29:50	1:12	1:11	2:10
Development success ratio	137:192	222:348	85:115	53:76	56:82	29:40	1:4	0:5	4:13
Total costs, $000:									
Mud	$112,678	$249,168	$57,010	$109,064	$107,643	$47,414	$17,788	$18,476	$21,231
Drilling	$1,054,719	$2,570,424	$527,341	$818,513	$986,282	$412,264	$187,303	$198,314	$304,014
Completion	$246,490	$473,200	$118,665	$180,466	$184,352	$72,516	$24,244	$9,956	$27,751
Total	$1,316,360	$3,053,287	$650,933	$1,013,618	$1,178,075	$494,994	$212,659	$208,276	$333,573
Total footage	4,737,907	8,678,458	2,470,827	3,494,374	3,410,467	1,565,519	269,501	264,305	381,182

	Utah			Wyoming		
	1981 (10 wells)	**1982 (14 wells)**	1983 (7 wells)	**1981 (39 wells)**	**1982 (43 wells)**	1983 (21 wells)
Averages:						
Well depth, ft	16,899	17,079	16,999	16,957	17,127	17,580
Cost/well, $000	$6,477	$10,242	$10,297	$8,120	$10,300	$9,552
Cost/ft	$383	$600	$604	$479	$601	$526
Mud cost/well, $000	$592	$840	$1,044	$834	$921	$733
Mud cost/ft	$35	$49	$60	$49	$54	$40
Bits/well	56	87	76	66	71	64
Ft/bit	300	196	297	256	243	348
Tubulars/well, tons	NR	NR	520	NR	NR	644
Tubular cost/well, $000	NR	NR	$1,274	NR	NR	$1,822
Success ratio	3:10	3:14	3:7	28:39	22:43	9:21
Wildcat success ratio	0:5	1:11	0:4	14:22	8:24	3:14
Development success ratio	3:5	2:3	3:3	14:17	14:19	6:7
Total costs, $000:						
Mud	$5,922	$11,764	$7,311	$32,534	$39,600	$15,397
Drilling	$54,159	$130,538	$69,153	$264,978	$382,792	$179,071
Completion	$10,271	$12,846	$2,725	$47,483	$58,434	$20,324
Total	$64,768	$143,385	$72,078	$316,661	$442,913	$200,585
Total footage	168,994	239,100	118,990	661,323	736,451	369,173

Note: PETROLEUM ENGINEER INTERNATIONAL has been analyzing deep drilling annually since 1944. Base data are acquired from various industry sources, including contract drilling companies and Petroleum Information Corp., Denver, Colo. Operating companies confirm the wells and, through a special arrangement, provide us with cost data on a confidential basis. Laura Jacobus compiled the data for this report, which was written by Rich McNally.

during 1983. But, you have to give some credit, also, to the improved drilling economics that have accompanied the surplus of rigs in recent years. As indicated earlier, cost per foot decreased by 7.5% in 1983. And this was despite an 8.9% increase in mud cost.

Regionally, the most economical place in which to drill deep last year seemed to be the Mid-Gulf Coast Basin of southern Alabama and Mississippi and the Florida Panhandle. Alabama drillers completed 21 deep wells in the Basin at an average cost per well of just over $2 million. In the process, they reduced per-well cost by more than $1 million as compared with the previous year.

All of Florida's deep wells were drilled in the Panhandle during 1983, and they cost slightly more than $3.6 million apiece. Cost per foot, however, was way below the national average. At $219 per foot, it also was $5 less than the average compiled by Florida deep drillers in 1982.

Deep completions in Mississippi's portion of the Mid-Gulf Coast Basin declined by 65% last year, but the 24 wells that were completed were drilled at an average cost under $2 million. Average well depth was substantially shallower than it had been in 1982, but, even so, cost per foot was almost cut in half during 1983.

Drillers throughout the Basin were way above the national average in footage drilled per bit, and Florida led the way with more than 1,000 ft/bit.

All of New Mexico's deep wells were drilled in that state's portion of the Permian Basin, and the 13 of them cost an average of just under $2.5 million apiece. During the previous year, New Mexican deep wells had cost an average of more than $3 million. Deep well operators in New Mexico, therefore, were treated to a 26% improvement in drilling economics during 1983. In addition, they also enjoyed a success rate of 85%, with 11 of their 13 deep wells being completed as producers.

Wyoming operators had the deepest average well depth of all states, but they managed to keep their average well cost below the $10-million mark that was

Wells completed 15,000 ft and below by years of completion

										New records	
Year	**No. of wells**	**Exploratory**	**Total producers**	**Average bits/well**	**Mud costs average**	**Well costs average**	**Average cost/ft**	**Total footage drilled**	**Average ft/well**	**Deepest well**	**Deepest producer**
1938	1	1	1	–	–	–	–	15,004	–	15,004	13,175
1944	1	1	0	–	–	–	–	15,279	–	15,279	–
1945	3	3	0	222	–	–	–	47,245	15,748	16,655	–
1946	1	1	1	–	–	–	–	15,452	–	–	–
1947	8	8	1	181	$ 24,000	$ 570,000	$ 35.87	127,128	15,891	17,823	13,904
1948	7	6	2	303	28,000	551,000	34.34	112,329	16,047	–	14,255
1949	11	8	5	199	64,000	534,000	32.52	180,631	16,421	20,521	15,530
1950	5	2	3	181	63,000	557,000	36.72	78,565	15,713	–	–
1951	12	5	6	116	54,000	527,000	33.56	189,864	15,822	–	–
1952	25	17	9	138	66,000	549,000	34.77	396,850	15,874	–	16,012
1953	25	14	20	159	75,000	729,000	44.79	402,936	16,177	21,482	17,895
1954	56	30	31	117	92,000	651,000	40.87	892,021	15,929	–	–
1955	80	63	43	87	116,000	649,000	40.09	1,276,560	15,957	22,559	–
1956	155	77	78	89	122,000	683,000	42.18	2,510,050	15,988	–	20,745
1957	185	114	89	89	121,000	743,000	46.25	2,987,841	16,064	–	–
1958	197	136	100	79	107,000	692,000	43.18	3,171,762	16,019	–	–
1959	228	142	119	71	83,000	650,000	40.48	3,660,857	16,056	25,340	–
1960	242	134	136	66	86,000	675,000	42.50	3,858,622	15,945	–	–
1961	243	84	153	63	81,000	614,000	38.07	3,918,324	16,124	–	–
1962	254	74	130	63	92,000	654,000	38.00	4,414,300	17,000	–	–
1963	271	96	128	52	97,246	696,000	42.85	4,401,363	16,241	–	21,410
1964	308	141	150	51	95,507	653,256	39.33	5,115,938	16,610	–	21,793
1965	330	117	156	59	90,160	610,784	36.50	5,522,541	16,735	–	22,098
1966	388	130	149	71	84,007	727,996	42.20	6,693,785	17,252	–	22,483
1967	402	142	192	67	96,375	762,676	45.29	6,769,371	16,839	–	–
1968	406	150	194	65	100,305	889,991	52.13	6,931,232	17,072	–	22,790
1969	389	116	206	54	101,529	866,349	50.91	6,619,216	17,016	–	–
1970	381	168	189	54	117,874	999,343	57.87	6,579,870	17,270	25,600	–
1971	417	149	210	60	146,049	949,959	54.81	7,227,444	17,332	–	–
1972	506	230	290	44	103,507	919,484	54.21	8,583,278	16,963	30,050	22,548
1973	506	213	272	38	122,067	1,107,059	63.58	8,810,918	17,413	–	–
1974	446	220	258	37	168,426	1,456,522	84.08	7,726,058	17,323	31,441*	–
1975	410	191	190	37	197,279	1,901,017	109.80	7,098,330	17,313	–	–
1976	439	186	255	33	214,276	2,112,509	121.98	7,603,041	17,319	–	–
1977	476	233	233	30	221,490	2,205,954	127.58	8,230,040	17,290	–	26,566**
1978	604	306	288	29	253,082	2,577,216	150.60	10,352,560	17,140	–	–
1979	621	248	279	30	414,000	3,599,000	208.68	10,709,644	17,246	–	–
1980	859	433	462	32	478,906	4,560,090	265.47	14,755,480	17,178	–	–
1981	1,066	530	598	35	526,638	5,467,372	313.01	18,243,075	17,114	–	–
1982	1,205	536	600	37	568,954	6,636,988	382.45	20,911,440	17,354	–	–
1983	**577**	**255**	**301**	**32**	**$620,000**	**$6,095,000**	**$353.40**	**9,794,007**	**16,974**	–	–

*This is the all-time record depth hole, completed in Oklahoma's Anadarko Basin in May 1974 by Lone Star Producing Co.

**Chevron USA established the record depth production mark in 1977 with completion of No. 1 Ledbetter in Wheeler County, Texas. Gage was 2,500,000 cfd from the Arbuckle at 23,427-26,518 ft.

The following 156 contractors (reported by the operating companies) drilled the wells analyzed in PEI's 1983 deep well survey.

A & P Marine
Abbott Brothers
Anadarko Production
Anderson-Myers Drilling Co.
Apollo Drilling & Exploration
Apollo Drilling Ltd.
Arden Drilling Co.
Atco Drilling Inc.
Atlantic Pacific Marine Corp.
Baker & Taylor Drilling Co.
Bay Drilling Corp.
Blocker Energy Corp.
Bokenkamp Drilling Co. Ltd.
Bomac Drilling
Bracken Exploration
Brinkerhoff-Signal Inc.
BS&B Drilling
Butler-Johnson Inc.
Buzzini Drilling Co. Inc.
Cactus Drilling Corp.
Cardinal Drilling Co.
Challenger Drilling Inc.
Champion Drilling Corp.
Chase Drilling Co.
Chiles Drilling Co.
Cliffs Drilling Co.
Core Drilling Co.
Continental Drilling Co. Inc.
Continental Oil Co.
Cothrum Drilling Co.
Cromling Drilling Co.
Culver Drilling Co.
Ronny Darby
Decca Drilling Co.
Delex Drilling Co. Inc.
Delta Drilling Co.
Diamond M Co.
Dixilyn-Field Drilling Co.
Dolphin Titan International Inc.
Dorchester Drilling Inc.
Dual Drilling Co.
Durkee Drilling Inc.
Eason Oil Co.
Eljay Drilling Corp.
Eltex Drilling Contractors Inc.
Enopco
Exeter Drilling Co.
Explorer Drilling Co.
Flagg Drilling Co.
Flournoy Drilling Co.
Fluor Drilling Services Inc.
Forex-Neptune Inc.
Four Flags Drilling Co. Inc.
FWA Drilling Co. Inc.
Glasscock Drilling
Glendel Drilling Co.
Global Marine Inc.
Goldrus Drilling Co.
Grace Drilling Co.
Grey Wolf Drilling Co.
Griffin-Alexander Drilling Co.
Harkins & Co.
Harper-Turner Drilling
Helmerich & Payne International Drilling Co.
Henley Drilling Co.
Highbridge Drilling Co.
Houston Offshore International Inc.
Howell Drilling Inc.
Huthnance Drilling Co.
I.E.C. Drilling Co.
Imperial Drilling Co.
Intrepid Drilling Corp.
Iredco Drilling Co.
J.F.P. Well Service Inc.
JHJ Drilling Co.
Justiss Oil Co. Inc.
Keyes Offshore Inc.
Lanex Inc.
Larco Drilling Co. Inc.
Latshaw Drilling Co.
Loffland Brothers Co.
Lord Drilling Co. Inc.
R. L. Manning Co.
Mardrill Inc.
Marion Drlg. & Services Co.
Marlin Drilling Co. Inc.
Maverick Drilling Co. Inc.
Mercury Drilling Co.
Merit Drilling Co.
Mesa Drillers
MGF Drilling Co.
Miller Drilling
Montgomery Drilling Co.
Moran Brothers
E. W. Moran Drilling Co. Inc.
Murco Drilling Corp.
N & C Drilling
Navajo Drilling Co.
New & Hughes Drilling Co. Inc.
Nicklos Drilling Co.
Nicor Drilling Co.
Noble Drilling Corp.
Nordrill International Inc.
Nova Drilling Co.
Ocean Drilling & Exploration Co.
O'Connor & Young Drilling Co.
Padre Drilling Co. Inc.
Parker Drilling Co.
Parker Well Service Inc.
Pearson American Drilling Co.
Penrod Drilling Co.
Phoenix Seadrill
Pilgrim Drilling Co.
Power Rig Drilling Co. Inc.
PRC Drilling Co. Inc.
Chesley Pruet Drilling Co.
Quarles Drilling Corp.
Rapad Drilling Co.
Ratliff Drilling Co.
Rebstock Drilling Co.
Resource Drilling Inc.
Richards Drilling Co.
Rio Grande Drilling Co.
Robinson Brothers Drilling Co.
Rowan Drilling U.S.
Salen Offshore Drilling Co.
Sandia Drilling Co.
Santa Fe Drilling Co.
Schlensker Drilling Corp.
Sedco Inc.
Sharp Drilling Co. Inc.
A. J. Smart Drilling Co.
Smith & Stovall Drilling Corp.
Son Tom Drilling
Sonat Offshore Drilling Inc.
South Texas Drilling & Exploration Inc.
Southwestern Drilling Co.
Stamper Drilling
Teledyne Movible Offshore Inc.
Temple Drilling Co.
Tesoro Drilling Co.
Transcontinental Drilling Co.
Transworld Drilling Co.
Tri-Land Drilling
Tri-Service Drilling Co.
True Drilling Co.
Two R Drilling Co. Inc.
Unit Drilling & Exploration Co.
United Drilling Co.
Vierson & Cochran Drilling Co.
Westburne Drilling Inc.
Western Drilling Co.
Western Oceanic Inc.
Richard Whalen
Wilson Brothers Drilling Co.
Zapata Off-Shore Co.

reached by Utah and California. (Alaska also topped the $10-million mark, but costs there were influenced by an offshore stratigraphic test in the Bering Sea's Navarin Basin. Although the well was successful, its logistics reportedly made it one of the most difficult offshore wells ever drilled. And, also, one of the most expensive.) There are five deep drilling provinces in Wyoming, and last year's 21 deep wells were drilled in three of them – the Powder River, Green River, and Wind River Basins. The state's average well-depth record can be traced to wells in the Wind River Basin that were aimed at ultradeep deposits of natural gas. Ultradeep wells, those drilled to 20,000 ft and deeper, are the subject of a separate report in this issue of PETROLEUM ENGINEER INTERNATIONAL.

Utah was one of the few states in which deep drilling was more costly last year than it had been in 1982. But, not by much. The state's 7 deep wells cost an average of almost $10.3 million – about $50,000 higher than the 1982 average. Cost per foot, however, rose by only $4 in 1983 after having risen by more than $200 during the previous year. Wildcatting in Utah continues to be a risky business for deep drillers. All four deep exploratory wells drilled there in 1983 were dry. And only two of the 32 deep Utah wildcats drilled during the past 5 years have been successful. The success rate of deep development wells in Utah, on the other hand, is very good, averaging 71% since 1980.

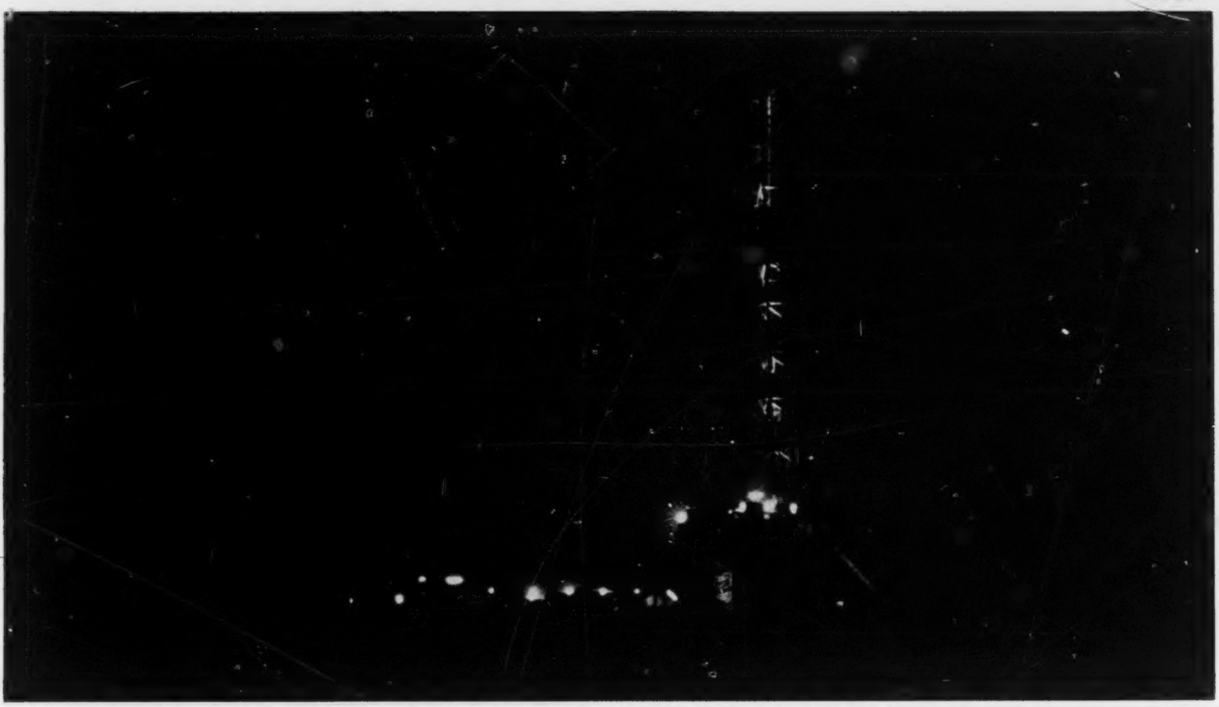
California had only two deep wells in 1983, but one of them was successful. It is noteworthy because it was a development well, and is the first deep development well to have been drilled in California since 1976 and only the second to have been drilled there since 1972.

Colorado had only one deep well in 1983, but that was an improvement over 1982, when there were none. It also was successful. Montana, which doesn't appear on the deep well charts very often, drilled one such well in 1983. A wildcat drilled in Park County, north of Yellowstone National Park, it was dry.

Deepest well of the year honors go to Texas, where Exxon Corp.'s No. 1 Pryor Estate wildcat reached a total depth of 26,805 ft. It, too, was a dry hole.

Of the 577 deep wells drilled in the U.S. last year, 301 of them found commercial quantities of oil or gas – mostly gas – for a 52% rate of success. That is slightly better than 1982's 49.7%, but it is down from 1981's 56.5%. Among the 255 deep wildcats completed in 1983, 89 of them are listed as successful (34%). More than 65% of the 322 development wells were successful also.

Last year's 577 deep wells were drilled by 156 drilling contractors for 172 operators. A list of the contractors accompanies this article, and the names of the operators can be found on the Deep Well Map foldout featured in this issue. ■



A Texas sunset silhouettes Loffland Brothers Co.'s Rig 118 as it drills near Ozona, Tex. The big rig now is drilling for Conoco Inc. in Leon County, Texas.

Ultradeep Drilling Falls To 16-Year Low

You have to go all the way back to 1967 to find a year that didn't have more ultradeep wells than were drilled in 1983, when the total number of wells drilled to 20,000 ft or deeper in the U.S. was 37. That's only three more than were drilled in 1967, and it's 95 fewer than were completed during deep drilling's halcyon year of 1982.

Average total depth of 1983's superdeep wells was 21,674 ft, and their average cost was $9.9 million. Total ultradeep drilling expenditures last year amounted to slightly more that $368 million for almost 802 million feet of hole. That translates into approximately $461 per foot, which is some $59 less than cost per foot during 1982 but is just about flat with costs registered during 1981.

Success rate for 1983's 37 ultradeep wells was 62%, with 7 out of 16 wildcats and 16 of 21 development wells finding oil or gas. That represents an improvement over 1982's superdeep activity, but, once again, is about even with 1981.

Texas was the leading ultradeep state during 1983, with 15 20,000-ft wells. Tallest among them is Exxon Corp.'s No. 1 Pryor Estate in Pecos County. With a total depth of 26,805 ft, it is the deepest well of the year. Officially listed as a dry hole, the well has produced some oil from the Wolfkamp formation at about 10,000 ft. But, the economics appear to be against its eventual completion as a producer.

U.S. ultradeep drilling*

	1981 (81 wells)	1982 (132 wells)	1983 (37 wells)
Averages:			
Well depth, ft	21,546	21,617	21,674
Cost/well, $000	$9,957	$11,242	$9,967
Cost/ft	$462	$520	$461
Mud cost/well, $000	$1,041	$1,068	$820
Mud cost/ft	$48	$49	$38
Bits/well	47	60	49
Ft/bit	473	558	552
Tubulars/well, tons	NR	NR	964
Tubular cost/well, $000	NR	NR	$2,376
Success ratio	49:81	55:132	23:37
Wildcat success ratio	31:57	24:82	7:16
Development success ratio	18:24	31:50	16:21
Total costs, $000:			
Mud	$84,284	$140,939	$30,354
Drilling	$674,994	$1,316,263	$333,044
Completion	$129,065	$166,926	$27,111
Total	$806,537	$1,483,931	$368,764
Total footage	1,745,190	2,853,430	801,936

*Ultradeep drilling, in this and subsequent tables, includes all wells drilled to 20,000 ft and deeper.

	Alabama offshore			Louisiana land			Louisiana offshore		
	1981 (0 wells)	**1982 (2 wells)**	1983 (4 wells)	**1981 (27 wells)**	**1982 (20 wells)**	1983 (4 wells)	**1981 (4 wells)**	**1982 (0 wells)**	1983 (2 wells)
Averages:									
Well depth, ft		21,404	21,131	21,107	20,844	20,689	20,696		20,316
Cost/well, $000		$36,750	$19,008	$10,867	$12,389	$6,701	$11,082		$10,204
Cost/ft		$1,716	$899	$515	$594	$324	$535		$502
Mud cost/well, $000		$1,940	$964	$1,181	$1,390	$709	$850		$601
Mud cost/ft		$91	$46	$56	$67	$34	$41		$30
Bits/well		107	52	50	53	27	41		32
Ft/bit		201	432	424	390	814	511		646
Tubulars/well, tons		NR	1,066	NR	NR	NR	NR		705
Tubular cost, well, $000		NR	$3,507	NR	NR	NR	NR		$1,477
Success ratio		2:2	4:4	15:27	6:20	3:4	0:4		0:2
Wildcat success ratio		–	2:2	9:20	1:13	–	0:4		0:2
Development success ratio		2:2	2:2	6:7	5:7	3:4	–		–
Total costs, $000:									
Mud		$3,879	$3,856	$31,889	$27,804	$2,835	$3,398		$1,202
Drilling		$66,173	$73,010	$241,265	$229,169	$21,589	$43,095		$20,408
Completion		$7,327	$3,022	$50,707	$18,607	$5,214	$223		–
Total		$73,500	$76,032	$293,398	$247,777	$26,803	$44,327		$20,408
Total footage		42,808	84,523	569,893	416,876	82,754	82,782		40,632

	Oklahoma			Texas			Wyoming		
	1981 (14 wells)	**1982 (67 wells)**	1983 (8 wells)	**1981 (25 wells)**	**1982 (31 wells)**	1983 (15 wells)	**1981 (1 well)**	**1982 (3 wells)**	1983 (4 wells)
Averages:									
Well depth, ft	21,620	21,601	21,909	21,879	22,149	22,140	20,170	21,717	21,665
Cost/well, $000	$9,988	$10,233	$5,547	$7,834	$9,890	$8,943	$10,344	$20,833	$16,750
Cost/ft	$462	$474	$252	$358	$447	$405	$513	$959	$764
Mud cost/well, $000	$910	$958	$659	$884	$909	$775	$1,055	$1,634	$1,390
Mud cost/ft	$42	$44	$30	$40	$41	$35	$52	$75	$64
Bits/well	64	63	38	37	52	49	75	118	100
Ft/bit	337	343	586	581	429	566	269	184	243
Tubulars/well, tons	NR	NR	738	NR	NR	964	NR	NR	$1,291
Tubular cost/well, $000	NR	NR	$1,086	NR	NR	$1,953	NR	NR	5,600
Success ratio	7:14	29:67	6:8	18:25	11:31	10:15	1:1	1:3	0:4
Wildcat success ratio	6:9	13:34	1:2	10:16	8:25	4:7	1:1	1:3	0:3
Development success ratio	1:5	16:33	5:6	8:9	3:6	6:8	–	–	0:1
Total costs, $000:									
Mud	$12,742	$64,171	$5,270	$22,101	$28,167	$11,630	$1,055	$4,902	$5,561
Drilling	$122,638	$589,933	$36,009	$163,832	$274,053	$115,028	$5,820	$53,800	$67,000
Completion	$17,144	$95,666	$8,365	$32,018	$31,812	$10,510	$4,524	$8,700	–
Total	$139,825	$685,603	$44,374	$195,850	$306,602	$134,147	$10,344	$62,500	$67,000
Total footage	302,681	1,447,287	175,270	546,972	686,618	332,099	20,170	65,151	86,658

Pecos County, of course, is in the Permian Basin, and that's where 10 of Texas's ultradeep wells were drilled. The others were spread out among East Texas (2), the Texas portion of the Anadarko Basin (2), and the Gulf Coast Basin in South Texas (1). Two-thirds of the 15 wells are listed as producers.

Oklahoma is second among last year's five ultradeep drilling states, with eight wells that were drilled to an average total depth of 21,909. That is the deepest average depth of any other ultradeep drilling state, but, paradoxically, the cost of the average ultradeep well in Oklahoma was lower than in any other state. At $5.5 million, average per-well cost in the Sooner State bettered Louisiana's average by more than $2 million. And it was more than $3 million lower than the Texas average.

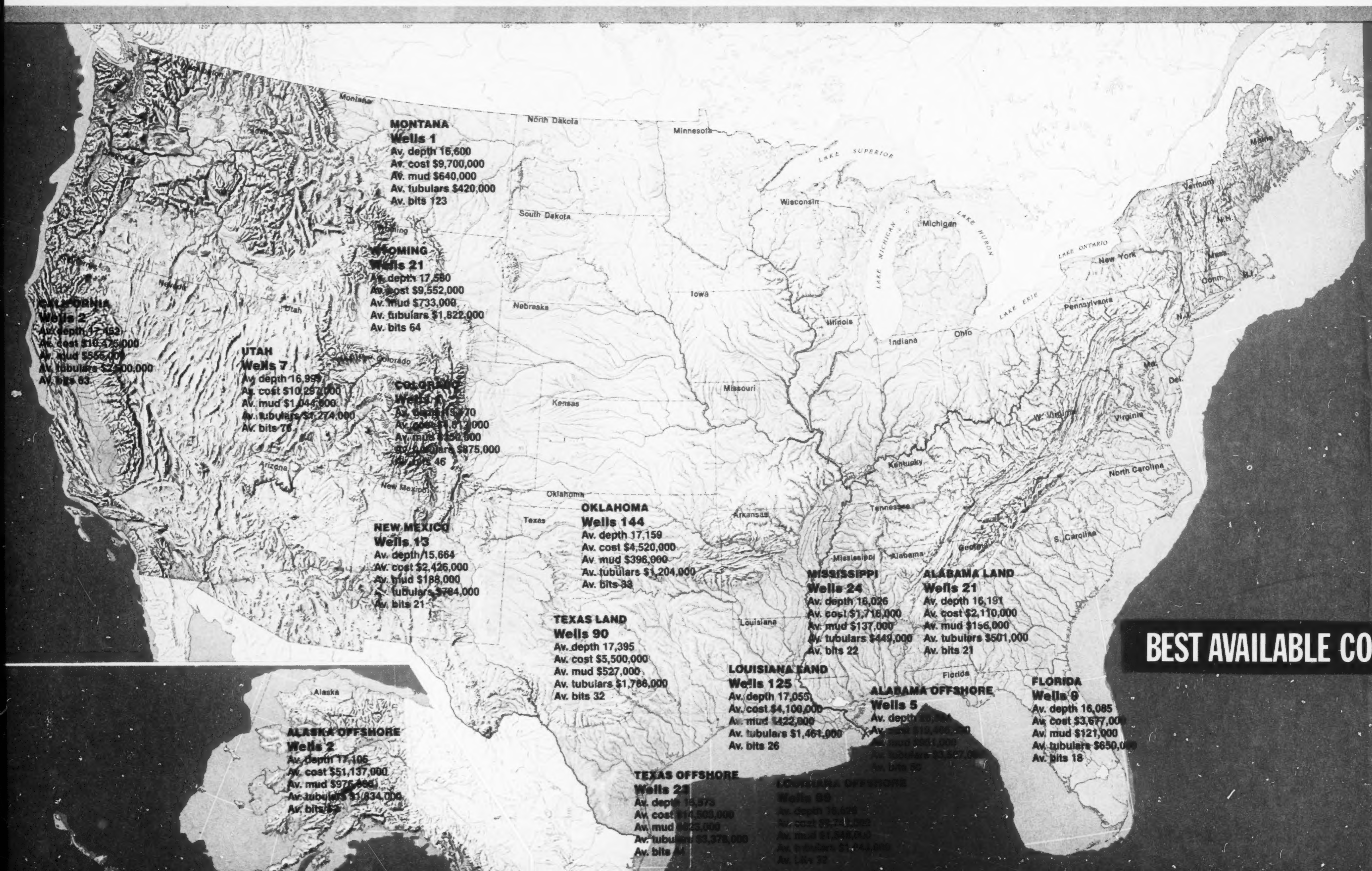
Wyoming's four ultradeep wells were drilled in the Wind River Basin, where Cretaceous and Jurassic zones at depths of around 20,000 ft are the deepest producing formations found to date in the Rocky Mountains. It's expensive going, however, with the average Wyoming ultradeep well costing close to $18 million.

Louisiana and Alabama were the only states to drill ultradeep wells offshore during 1983. Two of the Pelican State's six super wells were drilled offshore, as were all of Alabama's. Although Louisiana was able to drill its two offshore wells (both dry holes) for $11 million apiece, the average expenditure offshore Alabama was more than $19 million. All four of the ultradeep Alabama wells are producers, however. One reason for the high costs off Alabama is that three of the wells were drilled in Mobile Bay, which is a "no-discharge-of-pollutants" area. That makes drilling very expensive.

The average total depth of all six of last year's offshore ultradeep wells came to 20,859 ft. They cost a total of $96 million, which comes out to a little bit more than $16 million apiece. Four of the six wells were completed as producers. And four of them were wildcats – two in Alabama and two in Louisiana.

— *Rich McNally and Laura Jacobus*

1983 U.S. deep drilling 577 deep wells


Washington
Montana
Idaho
Oregon
Nevada
Utah
Wyoming
Colorado
Arizona
New Mexico
North Dakota
South Dakota
Nebraska
Kansas
Oklahoma
Texas
Minnesota
Iowa
Missouri
Arkansas
Louisiana
Wisconsin
Illinois
Michigan
Indiana
Ohio
Kentucky
Tennessee
Mississippi
Alabama
Georgia
Florida
S. Carolina
North Carolina
Virginia
W. Virginia
Md.
Del.
N.J.
Pennsylvania
New York
Conn.
R.I.
Mass.
Vermont
N.H.
Maine
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
Alaska
MONTANA
Wells 1
Av. depth 16,600
Av. cost $9,700,000
Av. mud $640,000
Av. tubulars $420,000
Av. bits 123
WYOMING
Wells 21
Av. depth 17,590
Av. cost $9,552,000
Av. mud $733,000
Av. tubulars $1,822,000
Av. bits 64
CALIFORNIA
Wells 2
Av. depth 17,452
Av. cost $10,475,000
Av. mud $555,000
Av. tubulars $2,500,000
Av. bits 63
UTAH
Wells 7
Av. depth 16,999
Av. cost $10,297,000
Av. mud $1,044,000
Av. tubulars $1,274,000
Av. bits 76
COLORADO
Wells [illegible]
Av. depth [illegible]70
Av. cost [illegible],000
Av. mud [illegible],000
Av. tubulars $875,000
Av. bits 46
NEW MEXICO
Wells 13
Av. depth 15,664
Av. cost $2,426,000
Av. mud $188,000
Av. tubulars $784,000
Av. bits 21
OKLAHOMA
Wells 144
Av. depth 17,159
Av. cost $4,520,000
Av. mud $396,000
Av. tubulars $1,204,000
Av. bits 33
TEXAS LAND
Wells 90
Av. depth 17,395
Av. cost $5,500,000
Av. mud $527,000
Av. tubulars $1,786,000
Av. bits 32
MISSISSIPPI
Wells 24
Av. depth 16,026
Av. cost $1,716,000
Av. mud $137,000
Av. tubulars $449,000
Av. bits 22
ALABAMA LAND
Wells 21
Av. depth 16,191
Av. cost $2,110,000
Av. mud $156,000
Av. tubulars $501,000
Av. bits 21
LOUISIANA LAND
Wells 125
Av. depth 17,055
Av. cost $4,100,000
Av. mud $422,000
Av. tubulars $1,461,000
Av. bits 26
ALABAMA OFFSHORE
Wells 5
Av. depth [illegible]
Av. cost $19,406,[illegible]
Av. mud $[illegible],000
Av. tubulars $3,567,[illegible]
Av. bits 50
FLORIDA
Wells 9
Av. depth 16,085
Av. cost $3,677,000
Av. mud $121,000
Av. tubulars $650,000
Av. bits 18
TEXAS OFFSHORE
Wells 23
Av. depth 16,573
Av. cost $14,503,000
Av. mud $823,000
Av. tubulars $3,378,000
Av. bits [illegible]
LOUISIANA OFFSHORE
Wells 99
Av. depth 16,626
Av. cost $9,740,000
Av. mud $1,548,000
Av. tubulars $1,843,000
Av. bits 32
ALASKA OFFSHORE
Wells 2
Av. depth 17,105
Av. cost $51,137,000
Av. mud $976,000
Av. tubulars $1,634,000
Av. bits [illegible]

BEST AVAILABLE CO

DEEP WELL OPERATORS

There were 172 deep well operators in 1983.

Adobe Oil & Gas Corp.
American Petrofina Co. of Texas
American Trading & Production Corp.
Amoco Production Co.
Amoco-Western Co.
Anadarko Production Co.
Anderman-Smith Operating
Andover Oil Co.
Anglo Production
ANR Production Co.
An-Son Corp.
Apache Corp.
ARCO Oil and Gas Co.
Arkla Exploration Co.
B & B Farm
Baker & Taylor Drilling Co.
Bass Enterprises Production Co.
Belco Petroleum Corp.
Berexco
Bishop Petroleum Inc.
Block Petroleum
Border Exploration Co.
Bow Valley Resource Services Ltd.
Tom Brown Inc.
BTA Oil Producers
Bunker Exploration Co.
W. T. Burton
Buttonwood Petroleum Inc.
C & K Petroleum Inc.
Callon Petroleum Co.
Campbell Energy Corp.
Cashco Oil Co.
Celeron Oil & Gas Co.
Champlin Petroleum Co.
Chapman Oil Co.
Chevron USA Inc.
Cities Service Co.
CNG Production Co.
Cockrell Exploration Co.
Cockrell Oil Corp.
Conoco Inc.
Core Petroleum Ltd.
Cotton Petroleum Corp.
CPC Exploration Inc.
Crystal Oil Co.
Dallas Exploration Inc.
Davis Oil Co.
Delta Energy Resources Inc.
Diamond Shamrock Corp.
Walter Duncan
Dyco Petroleum Corp.
Energetics Inc.
Energy Production Co.
Entex Petroleum Inc.
Esco Exploration
ETS Enterprises
Exchange Oil
Exxon Co. USA
First Energy Corp.
Florida Exploration Co.
Forest Oil Corp.
Franks Petroleum Inc.
Gadsco Inc.
Getty Oil Co.
Goldking Petroleum
Grace Petroleum Corp.
Great Southern Oil & Gas Co. Inc.
Gulf Oil Corp.
Michel T. Halbouty Energy Co.
Harkins & Co.
Harper Oil Co.
Hawthorne Oil & Gas Corp.
Helmerich & Payne Inc.
Highlands-Goodall-Greer
Howell Drilling Inc.
J. M. Huber Corp.
Huffco Petroleum Co.
Hughes & Hughes Oil and Gas
Hunt Oil Co.
Husky Oil Co.
Inexco Oil Co.
Ingram Exploration Co.
Kaiser-Francis Oil Co.
Kerr-McGee Corp.
Kilroy Co. of Texas Inc.
Lamson Onshore Petroleum Corp.
Latham Resources Corp.
Lea Exploration Co.
Lear Petroleum Corp.
Leede Oil & Gas Inc.
Lexco
Liberty
Linmar Energy
Louisiana Gas Service
Mack Oil Corp.
Maralo Inc.
Marathon Oil Co.
Marion Corp.
Marshall Oil Corp.
D. W. Maxwell
McMoRan Exploration Co.
Mesa Petroleum Co.
Midroc Oil Co.
Jeff Miller
Mobil Oil Corp.
W. A. Moncrief
Monsanto Oil Co.
Moran Exploration
Mosbacher Production Co.
MTS Ltd. PA
Natomas North America Inc.
Nestor Petroleum Co.
Nicklos Oil & Gas Co.
Northwest Exploration Co.
Nova Energy Corp.
Ocean Drilling & Exploration Co.
O I L Energy
J. R. Partain
PCX Corp.
Pel-Tex Oil Co. Inc.
Pelto Oil Co.
Penn Resources
Pennzoil Exploration and Production Co.
Petra Resources
Petrus Operating
Phillips Energy
Phillips Petroleum Co.
Placid Oil Co.
Plains Resources
Pogo Production Co.
Quintana Petroleum Corp.
Ricks Exploration
Robinson Brothers Drilling Co.
Samedan Oil Corp.
Samson Resources Co.
Sandefer Oil & Gas Inc.
Sanguine Ltd.
Santa Fe Energy Co.
Scandrill Oil
Seneca Resources Corp.
Shell Oil Co.
Smackco Ltd.
Sohio Petroleum Co.
Sonat Exploration Co.
Southwest Petroleum Corp.
Spooner Petroleum Co.
Jack Stack
The Stone Oil Corp.
Sun Exploration and Production Co.
Superior Oil
Tenneco Oil Co.
Texaco Inc.
Texas Gas Exploration Corp.
TexasGulf
Texoma Production
Transco Exploration Co.
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Weaver Oil & Gas Corp.
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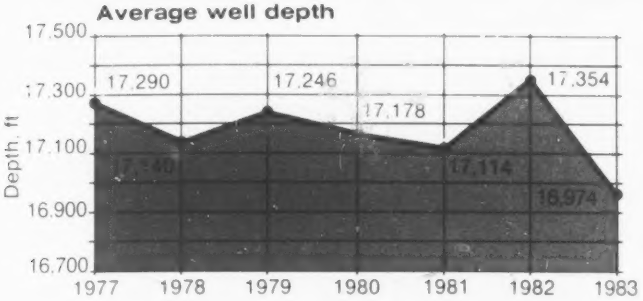
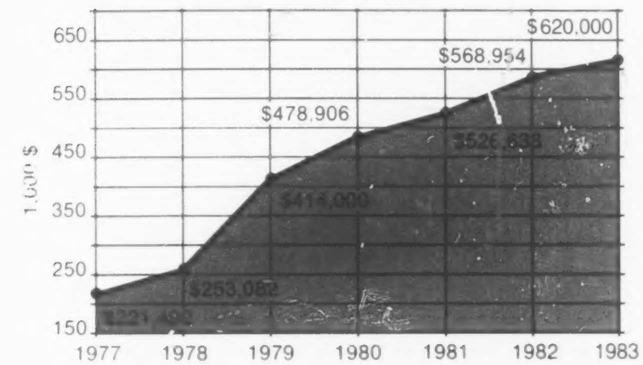
Westmont Oil
Wexpro Co.
Woods Petroleum Corp.

Based on PETROLEUM ENGINEER INTERNATIONAL'S Annual Deep Well Surv

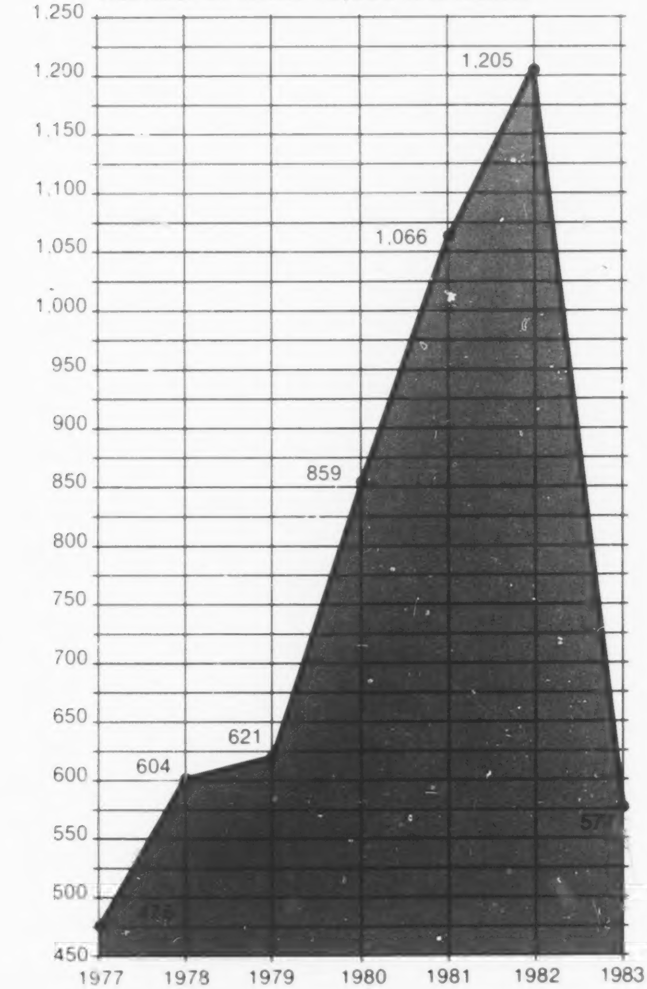
Average well depth



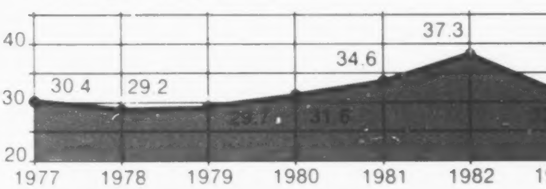
Average mud cost per well



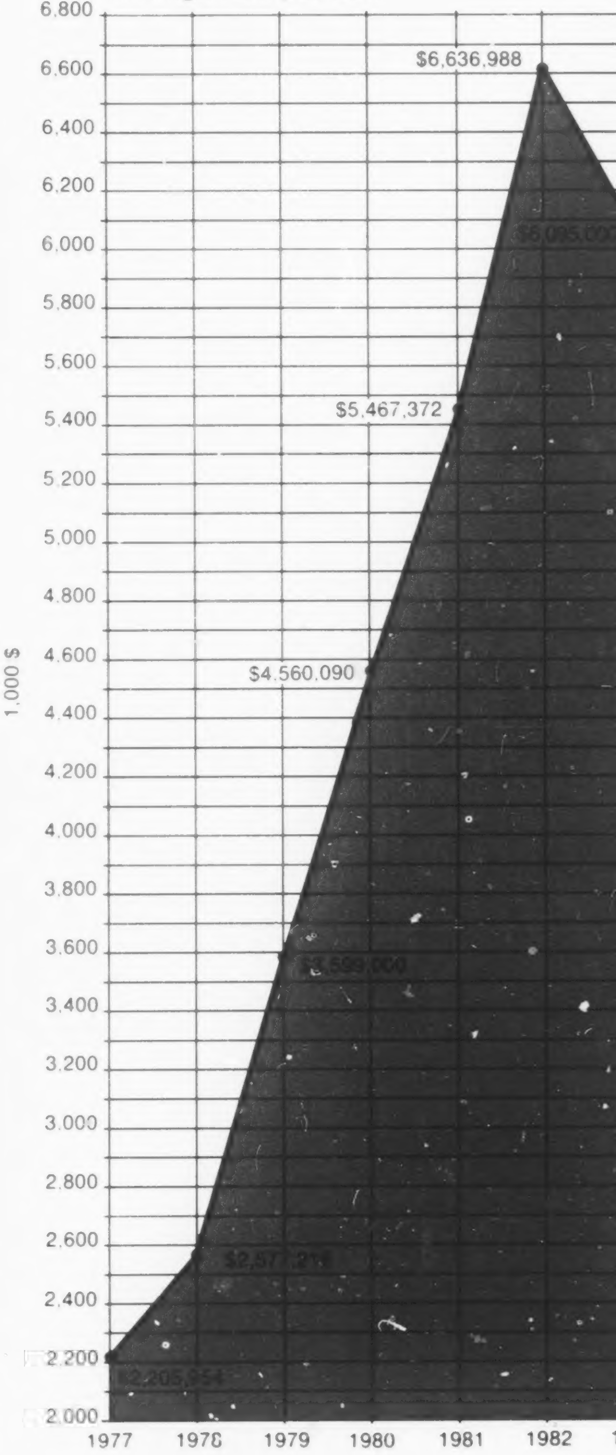
Number of wells 15,000 ft & below



Average bits per well



Average cost per well



Expenditures Increase In 1982 Despite Decline In Completions

Estimated costs for drilling and equipping wells in the U.S., by depth intervals (1982)

		Total number of wells Average depth and cost per well			
	Depth intervals, ft	Oil wells	Gas wells	Dry holes	Total
Wells		6,537	654	2,774	9,965
Avg depths	0-1,249	820	879	741	802
Avg costs $		34,739	41,995	22,031	31,677
Wells		6,542	2,333	3,959	12,934
Avg depths	1,250-2,499	1,791	1,941	1,839	1,833
Avg costs $		82,819	81,435	49,586	72,397
Wells		7,427	2,742	4,417	14,586
Avg depths	2,500-3,749	3,148	3,239	3,176	3,174
Avg costs $		154,821	153,315	90,958	135,199
Wells		5,028	3,427	3,829	12,284
Avg depths	3,750-4,999	4,393	4,277	4,350	4,347
Avg costs $		241,973	214,543	142,556	203,332
Wells		4,856	3,310	3,921	12,087
Avg depths	5,000-7,499	6,119	6,021	6,100	6,086
Avg costs $		455,192	428,658	308,151	400,226
Wells		3,696	1,854	2,215	7,765
Avg depths	7,500-9,999	8,657	8,675	8,649	8,659
Avg costs $		853,801	1,045,439	775,803	877,308
Wells		1,198	1,299	1,326	3,823
Avg depths	10,000-12,499	10,982	11,053	11,109	11,050
Avg costs $		1,816,678	1,933,754	1,592,655	1,778,757
Wells		396	799	734	1,929
Avg depths	12,500-14,999	13,368	13,527	13,581	13,515
Avg costs $		3,185,099	3,518,731	2,974,629	3,243,205
Wells		68	393	349	810
Avg depths	15,000-17,499	16,045	16,155	16,082	16,114
Avg costs $		5,328,091	5,725,045	5,121,843	5 431,822
Wells		12	184	143	339
Avg depths	17,500-19,999	18,306	18,486	18,470	18,473
Avg costs $		8,745,778	9,308,595	7,564,101	8,552,795
Wells		5	57	68	130
Avg depths	20,000 & over	20,753	21,588	21,540	21,531
Avg costs $		8,783,022	12,655,221	13,760,956	13,084,675
Wells		35,869	17,052	23,735	76,652
Avg depths	Totals	4,024	5,912	4,951	4,731
Avg costs $		347,374	864,278	515,352	514,378

The amount of money spent to complete the average well in the U.S. in 1982 topped half a million dollars while average cost per foot topped $100. Both averages are all-time highs, and they reflect the steady increase that has occurred in drilling costs ever since the Arab oil embargo of 1973. At that time, average well cost was below $120,000 and average cost per foot was $22.50.

In 1982, the total cost of drilling and equipping oil and gas wells and dry holes in the U.S. amounted to approximately $39.4 billion, an increase of 7.5% over 1981's total $36.6 billion. And this is despite the fact that the number of wells drilled in 1982 decreased 5.2% and the total footage drilled decreased 6.7%, according to the Joint Association Survey On Drilling Costs. The survey is sponsored by the American Petroleum Institute, the Independent Petroleum Association of America, and the Mid-Continent Oil and Gas Association.

The survey finds that the average depth of oil wells completed in 1982 was 4,024 ft, a decrease of 3.8%. Average cost per foot for oil wells in 1982 was $86.34, an increase of 7.4% over the previous year.

Average depth of gas wells completed in 1982 was 5,912 ft, which also was an increase over the previous year – by 3.4%. The average cost per foot for 1982 gas wells was $146.20, a 19.7% increase over 1981.

Dry holes during 1982 were drilled to an average total depth of 4,951 ft, a decrease of 3.9%. Average cost per foot, however, was $104.09, an increase of 15.6% over 1981.

Offshore, the total cost of wells completed in 1982 amounted to approximately $6.1 billion, an increase of 10.9% over 1981. The total number of offshore wells decreased 0.8% in 1982, while their average depth increased 1.6%. Average cost per foot in 1982 was $423.32, an increase of 10%.

Texas Out Front

On a state-by-state basis, Texas was way out front, with more than $12 billion expended in the drilling of 24,274 wells and 125 million feet of hole. That puts the average well cost at $494,907, just under the national average of $514,378. Average depth of Texas wells (5,153 ft), on the other hand, topped the national average by 8.9%.

Oklahoma and Louisiana finished in a virtual tie for second place in total drilling expenditures – $7.558 billion for Oklahoma and $7.550 billion for Louisiana. But Oklahoma's billions bought nearly twice as many wells. Sooner-State drillers completed 10,312 wells during 1982 at an average cost of $732,995 apiece. Their average depth was 5,492 ft.

Louisiana, meanwhile, drilled 5,342 wells – 900 of them offshore. Average depth of Louisiana wells in 1982 was 6,644 ft. And their average cost was $1,413,348. Average cost of Louisiana's offshore wells was $4,084,572. Their average depth was 10,573 ft.

In all, there were 1,464 wells drilled

Expenditures for drilling and equipping wells in the U.S. during 1981 and 1982

	Oil wells		Gas wells		Dry holes		Total wells	
	1981	1982	1981	1982	1981	1982	1981	1982
Wells drilled	38,725	35,865	17,533	17,052	24,556	23,735	80,816	76,652
Footage drilled (000)	161,982	144,305	100,258	100,804	126,561	117,510	388,800	362,618
Total expenditures, millions*	$13,023	$12,459	$12,248	$14,738	$11,395	$12,232	$36,665	$39,428
Average depth, ft	4,183	4,024	5,718	5,912	5,154	4,951	4,811	4,731
Average cost per well*	$336,289	$347,374	$698,576	$864,278	$463,984	$515,352	$453,691	$514,378
Average cost per foot*	$80.40	$86.34	$122.17	$146.20	$90.03	$104.09	$94.30	$108.73

*Includes all money paid for drilling and equipping wells through the Christmas tree.

offshore the U.S. in 1982 at a total cost of more than $6 billion. This means that 15% of the year's drilling expenditures took place offshore, and they accounted for less than 2% of the year's total completions.

The figures are similar for deep drilling. The Joint Association Survey counted 1,279 deep wells in 1982 (15,000 ft and deeper), and they cost approximately $9 billion to drill and complete. Another 2% of the year's wells, therefore, accounted for more than 22% of the total expenditures.

Subtracting deep wells and offshore wells from the year's totals knocks a sizeable 36% off total drilling costs, bringing them to an average of $328,444 per well. The states coming closest to that average during 1982 were Arkansas, Colorado, and Michigan. Arkansas drillers completed 811 wells at an average cost of $336,096. In Colorado, 1,769 wells were completed for $677.5 million, which averages out at $382,971 per well. Michigan's 851 wells cost an average of $331,984 apiece.

U.S. Reserves Continue To Drop

U.S. oil reserves continued the declining trend of the 1970s into the early 1980s, according to the Oil and Gas Reserve Disclosures study released recently by Arthur Andersen & Co., a Houston, Tex.-based accounting and consulting firm. They say that U.S. oil reserves fell 4.7% and U.S. gas reserves dropped 1.6% for the 300 companies surveyed during the 1980-1982 period.

This occurred despite huge exploration and development expenditures. At the same time, U.S. oil production remained flat, and gas production declined 8.3% for the surveyed group.

The Andersen survey is a comprehensive study of proved oil and gas reserves and related costs for 300 companies during 1980-1982. Major economic changes have occurred, mainly in prices, during the past 4 years. Higher prices caused enormous oil and gas exploration efforts. But the companies could not find new reserves as fast as they depleted the old.

This survey is said to constitute the bulk of privately owned domestic reserves.

More than 80% of the companies reported tnat their reserves were estimated by independent engineers. In the most recent survey, 56% of the companies reported downward revisions of prior reserves estimates. Of these, two-thirds were decreases of more than 10%.

Expenditures and Results

As a group, the 300 firms involved in the study reinvested $166 billion, or 67% of their pretax net revenues, during the 3-year period to find new reserves. About three-fourths of the total was invested in the U.S. Approximately a fifth of the total was spent to obtain unproven acreage, and a third was spent for seismic and other exploration and for drilling wildcats. The balance, almost half of the total, was spent on

Total proved reserves of the surveyed companies, in combined equivalent bbl (millions). (Natural gas is converted at a rate of 6 Mcf/bbl.)

	Domestic				Worldwide			
	3-year total	1982	1981	1980	3-year total	1982	1981	1980
Beginning of period	47,292	45,700	46,336	47,292	71,016	71,081	70,987	71,016
Revisions	1,320	444	521	355	2,318	928	639	751
Additions*	8,509	2,650	3,021	2,838	12,941	3,807	4,289	4,846
Production	(12,874)	(4,144)	(4,327)	(4,403)	(17,868)	(5,825)	(5,949)	(6,095)
Purchases of reserves in-place	1,540	906	196	438	2,908	990	1,245	673
Sales of reserves in-place	(477)	(246)	(47)	(184)	(982)	(648)	(129)	(205)
End of period	45,309	45,309	45,700	46,336	70,334	70,334	71,081	70,987

*Additions include extensions and discoveries plus improved recoveries.

Changes, as percentages of the 1980 beginning-of-year balance

	Domestic				Worldwide			
	3-year total	1982	1981	1980	3-year total	1982	1981	1980
Beginning of period	100.0%	96.7%	98.0%	100.0%	100.0%	100.1%	99.9%	100.0%
Revisions	2.8	0.9	1.1	0.8	3.3	1.3	0.9	1.1
Additions	18.0	5.6	6.4	6.0	18.2	5.4	6.0	6.8
Production	(27.2)	(8.8)	(9.1)	(9.3)	(25.2)	(8.2)	(8.4)	(8.6)
Purchases of reserves in-place	3.2	1.9	0.4	0.9	4.1	1.4	1.8	0.9
Sales of reserves in-place	(1.0)	(0.5)	(0.1)	(0.4)	(1.4)	(1.0)	(0.1)	(0.3)
Balance, end of period	95.8%	95.8%	96.7%	98.0%	99.0%	99.0%	100.1%	99.9%

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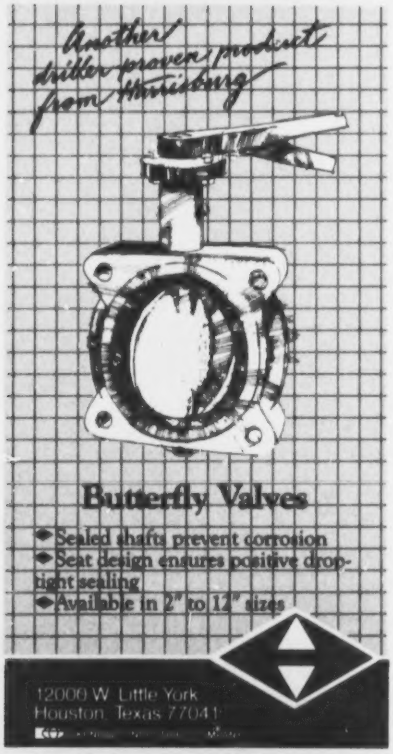
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30 pipeline-utility, and 77 diversified firms. The majors had 77% of the production and made 65% of the reserves additions over the 3-year study period.

Of the firms surveyed, 252 said whether their reserves estimates were made internally or externally. By a 4-to-1 margin, external engineers were used most often. This is mainly because of a need for unbiased data to justify borrowings, although some small firms do not have qualified staffers to prepare the data without outside consultants.

Copies of the full report can be obtained (subject to availability) from Arthur Andersen & Co. at 711 Louisiana St., Suite 1300, Houston, Tex. 77002.

Wilshire Confirms Texas Discovery

Wilshire Oil Co. of Texas has successfully completed the Sell No. 1 well in Lipscomb County, Texas. The second well drilled on the company's Stateline prospect, it tested more than 1,500 b/d of oil and 750 Mcfd of gas through a $^{32}/_{64}$-in. choke from the Upper Morrow formation at 8,137 ft.

Correction

In "TI-59 Helps Predict IPRs For Gravel-Packed Gas Wells" by Willard C. Capdevielle (PEI, December 1983, pp. 56-70), there was an error in Fig. 3, the program listing. Step 364 of the listing was shown as "55 −". It should have read, "55 ÷". The editors apologize for any inconvenience this may have caused our readers.

Letters

TO THE EDITOR:

We noted with interest the article in the November 15th issue of PETROLEUM ENGINEER INTERNATIONAL (p. 33) on turnkey drilling offshore.

It would appear that the performance of the D/S Tainaron, which we represent in the U.S., has not come to your attention. Between July 1978 and June 1983, the Tainaron drilled 30 turnkey wells in the Campos Basin of Brazil for Petrobras. Nine were template wells and 21 were exploratory.

During the same period, an affiliated company drilled six additional wells from the Garoupa platform, also on a turnkey basis. These figures more than double the number you cite.

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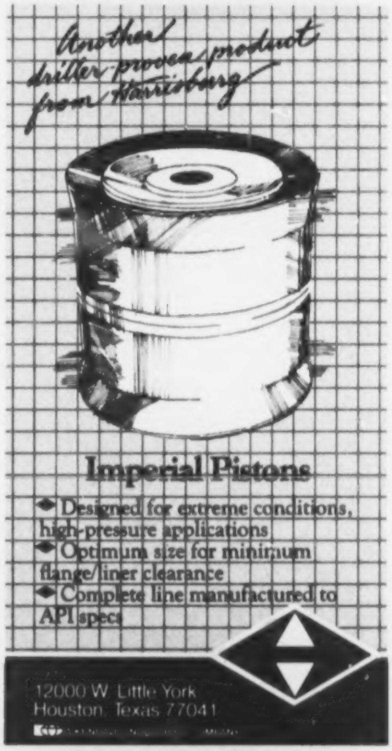
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Substantial Drop in Net Income Reported

Fourth quarter earnings for the oil companies responding to Energy Management Report's exclusive survey declined substantially from the same period in 1982.

Net income of $1.0 billion was reported for the quarter compared to $3.16 billion a year earlier, representing a 68% drop. For the year, earnings fell to $12.0 billion from $20.2 billion in 1982, a 41% decline. Profit margin fell from 3.5% to 1.7%

Gas companies fared much better during the fourth quarter. Net income dropped slightly from $439.7 million in 1982 to $439 million in 1983. Earnings fell 13% for the year, however, from $2.1 billion in 1982 to $1.8 billion in 1983. Profit margin for the group fell from 4.8% to 4.2%

Exxon's 10% increase in net income resulted from higher oil production in the North Sea.

Lower operating and administrative costs and improved productivity helped Gulf Oil earn 31% more during the fourth Quarter.

A dry hole at Mukluk off the northern coast of Alaska caused some problems for several companies.

As a result, Texaco posted a 16% decline; Standard Oil of Ohio's earnings dropped 30%; and Diamond Shamrock reported a fourth quarter loss of $130 million.

Mobil Oil's earnings also suffered from the Mukluk dry hole, but their non-petroleum operations improved, so earnings increased 12%.

Recent weakening of petroleum prices combined with higher U.S. exploration expenses resulted in a 5% drop in net income for Standard Oil of California.

Standard Oil of Indiana posted 11% higher earnings. The increase was due primarily to greater foreign liquids production, improved refined product margins, and higher earnings from chemical operations.

Lower exploration costs contributed to Getty Oil's 39% increase in net income.

Improvement in Shell Oil's chemical business, increased crude oil production, higher natural gas prices, and improved refined product margins all had a positive effect on net income. Earnings rose 25%.

Sun Company's earnings were adversely affected by a drop in U.S. exploration and production profit. Net income fell 60%.

Lower crude oil prices and increased oil and gas operating and depreciation charges were responsible for Atlantic Richfield's 3% drop in earnings.

Ashland Oil's net income dropped

OIL COMPANIES' FOURTH QUARTER FINANCIAL RESULTS

	Three months ending Dec. 31						Twelve months ending Dec. 31							
	Revenues ($000)			Earnings ($000)			Revenues ($000)			Earnings ($000)			Profit Margin	
Company	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982
Amerada Hess	2,321,305	2,116,414	9.68	57,006	43,613	30.71	8,422,076	8,394,085	0.33	205,347	168,662	21.75	2.44	2.01
American Petrofina	504,983	530,351	-4.78	23,362	14,835	57.48	2,088,526	2,253,678	-7.33	55,260	54,401	1.58	2.65	2.41
Anglo Energy1	37,683	51,666	-27.06	-19,726	-7,816	152.38	150,340	205,229	-26.74	-82,182	444	-18,609.46	-54.66	0.22
Ashland Oil	2,083,626	2,079,810	0.18	27,186	29,110	-6.61	8,111,985	8,780,339	-7.61	100,909	162,425	-37.87	1.24	1.85
Callon Petroleum2	8,613	5,896	46.08	1,169	-150	-879.33	27,580	20,747	32.93	1,515	349	334.10	5.49	1.68
Diamond Shamrock	1,177,767	755,339	55.93	-130,031	46,196	-381.48	4,026,107	3,177,379	26.71	-56,163	185,091	-130.34	-1.39	5.83
Dorchester Gas2	221,542	409,517	-45.90	2,174	5,613	-61.27	1,181,860	1,340,319	-11.82	14,213	17,975	-20.93	1.20	1.34
Exxon	24,663,000	26,394,000	-6.56	1,625,000	1,481,000	9.72	94,591,000	103,559,000	-8.66	4,985,000	4,186,000	19.09	5.27	4.04
Getty Oil	1,050,993	1,016,766	1.11	238,644	172,445	38.39	12,016,014	12,395,647	-3.06	493,466	690,712	-28.56	4.11	5.57
Gulf Oil Corp.	7,486,000	8,132,000	-7.94	297,000	226,000	31.42	28,887,000	30,630,000	-5.69	978,000	900,000	8.67	3.39	2.94
Helmerich & Payne	55,603	81,072	-31.64	10,576	13,516	-21.75	240,209	360,632	-33.39	47,800	75,690	-36.85	19.90	20.99
Holly Corp.3	103,494	112,777	-8.23	1,837	5,445	-66.26	444,643	452,079	-1.64	6,523	10,516	-37.97	1.47	2.33
Inexco Oil	44,858	47,478	-5.52	3,121	4,070	-23.32	173,240	217,539	-20.36	12,506	18,865	-33.71	7.22	8.67
Kerr-McGee Corp.	923,283	1,015,207	-9.05	17,141	73,515	-76.68	118,412	209,764	-43.55	17,141	73,515	-76.68	14.48	35.05
Louisiana Land & Exp.	376,401	331,302	13.61	18,900	23,173	-18.44	1,254,256	1,205,175	4.07	94,029	76,252	23.31	7.50	6.33
Mapco Inc.	546,567	540,701	1.08	16,042	19,695	-18.55	2,064,653	1,992,947	3.60	50,477	73,822	-31.62	2.44	3.70
Mobil Corp.	15,578,000	16,534,000	-5.78	445,000	398,000	11.81	58,515,000	64,108,000	-8.72	1,501,000	1,213,000	23.74	2.57	1.89
Murphy Oil	543,044	697,784	-22.17	23,883	38,807	-38.46	2,437,967	2,681,709	-9.09	131,876	157,759	-16.41	5.41	5.88
Nugget Oil Corp.4	739	1,100	-76.16	-781	-204	282.84	2,161	7,275	-70.29	1,449	-205	-806.83	67.05	-2.82
Occidental Petroleum	4,701,900	4,733,000	-0.66	246,000	2,000	12,200.00	191,157,000	17,657,500	982.58	566,700	155,600	264.20	0.30	0.88
Pennzoil	602,440	529,144	13.85	57,651	50,486	14.19	2,316,833	2,268,511	2.13	164,235	188,713	-12.97	7.09	8.32
Quaker State	217,629	210,144	3.56	9,074	7,216	25.75	902,690	928,933	-2.82	36,574	38,568	-5.17	4.05	4.15
Seneca Oil	3,918	5,792	-32.35	-1,230	-969	26.93	16,163	21,480	-24.75	-6,569	-5,717	14.90	-40.64	-26.61
Shell Oil	5,24[illegible],000	5,176,000	1.33	549,000	438,000	25.34	19,883,000	20,214,000	-1.64	1,633,000	1,605,000	1.74	8.21	7.94
Standard California	7,441,000	7,887,000	-5.65	403,000	425,000	-5.18	29,182,000	35,943,000	-18.81	1,590,000	1,377,000	15.47	5.45	3.83
Standard Indiana	7,406,000	7,383,000	0.31	459,000	415,000	10.60	29,489,000	29,783,000	-0.99	1,868,000	1,826,000	2.30	6.33	6.13
Standard Ohio	3,205,000	3,216,000	-0.34	324,000	464,000	-30.17	12,067,000	13,529,000	-10.81	1,512,000	1,879,000	-19.53	12.53	13.89
Summit Energy5	13,404	12,614	6.26	-1,705	1,256	-235.75	3,913	3,065	27.67	-510	-159	220.75	-13.03	-5.19
Sun	4,230,000	4,100,000	3.17	61,000	151,000	-59.60	15,520,000	16,260,000	-4.55	453,000	537,000	-15.64	2.92	3.30
Superior Oil	447,485	504,123	-11.23	63,746	24,034	165.23	1,793,332	2,040,518	-12.11	241,755	223,423	8.21	13.48	10.95
Tenneco	3,843,000	3,896,000	-1.44	273,000	226,000	20.80	14,448,000	14,979,000	-3.54	654,000	757,000	-13.61	4.53	5.05
Texaco Inc.	10,500,000	11,700,000	-10.26	256,000	306,000	-16.34	41,100,000	48,000,000	-14.37	1,233,000	1,281,000	-3.75	3.00	2.67
Texas Oil & Gas2	487,563	430,089	13.36	79,478	68,624	15.82	1,928,654	1,885,891	2.27	306,557	261,538	17.21	15.89	13.87
Tipperary Corp.	16,052,000	13,962,000	14.97	1,391,000	-2,119,000	-165.64	60,724,000	60,162,000	0.93	848,000	-5,500,000	-115.42	1.40	-9.14
Tosco Corp.	481,064	913,745	-47.35	-138,602	3,054	-4,638.37	2,494,200	3,465,946	-28.04	-378,098	132,409	-385.55	-15.16	3.82
Total Petroleum N.A.	520,211	583,772	-10.89	3,914	5,248	-25.42	2,071,957	2,233,056	-7.21	-31,151	12,752	-344.28	-1.50	0.57
Union California	2,680,500	2,736,100	-2.03	178,000	225,000	-20.89	10,693,100	10,899,100	-1.89	625,900	804,000	-22.15	5.85	7.38
Universal Resources5	13,686,000	12,599,000	8.63	-5,865,000	-115,000	5,000.00	48,351,000	58,117,000	-16.80	-7,848,000	6,609,000	-218.75	-16.23	11.37
Total:	141,488,514	143,432,703	-1.40	1,004,829	3,161,812	-68.20	708,894,871	580,382,543	22.10	12,026,559	20,247,400	-40.60	1.70	3.50

1 Ends Sept. 30 2 Ends Nov. 30 3 Year end July 31, 1983 4 Six months ending Oct. 31 5 Ends Oct. 31

GAS COMPANIES' FOURTH QUARTER FINANCIAL RESULTS

Company	Three months ending Dec. 31						Twelve months ending Dec. 31						Profit Margin	
	Revenues ($000)			Earnings ($000)			Revenues ($000)			Earnings ($000)				
	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982	%CHG	1983	1982
Alabama Tennessee N.G.	36,080	36,277	-0.54	1,765	1,666	5.94	137,737	132,881	3.65	6,124	5,982	2.37	4.45	4.50
Alagasco Inc.	97,062	91,828	5.70	848	822	3.16	400,429	353,349	13.32	6,261	6,012	4.14	1.56	1.70
American Nat. Resources	965,000	822,000	17.40	51,000	47,800	6.69	3,372,000	3,097,000	8.88	171,300	161,100	6.33	5.08	5.20
ARKLA	307,289	316,247	-2.83	-8,913	10,166	-187.67	1,297,541	1,296,584	0.07	59,123	95,380	-38.01	4.56	7.36
Columbia Gas	1,600,394	1,418,070	12.86	67,890	64,638	5.03	5,101,242	5,103,256	-0.04	164,754	180,063	-8.50	3.23	3.53
ENSERCH Corp.	822,349	913,433	-9.97	-3,011	21,059	-114.30	3,502,365	3,787,675	-7.53	60,760	145,612	-58.27	1.73	3.84
Entex Inc.	354,987	357,900	-0.81	22,682	13,827	64.04	1,293,143	1,269,291	1.88	63,155	57,334	10.15	4.88	4.52
Houston N.G.[1]	744,075	748,013	-0.53	47,991	58,698	-18.24	2,958,429	3,081,613	-4.00	179,519	249,569	-28.07	6.07	8.10
Intermountain Gas	36,228	43,234	-16.20	1,760	1,893	-7.02	132,871	149,111	-10.89	4,997	4,449	12.32	3.76	2.98
MidCon Corp.[2]	637,076	581,464	9.56	10,914	11,920	-9.28	3,318,975	3,337,430	-0.55	121,605	132,634	-8.31	3.66	3.97
ONEOK Inc.	297,263	255,422	16.38	14,137	8,113	74.25	1,102,703	1,088,620	1.29	35,761	49,988	-28.46	3.24	4.59
Panhandle Eastern	972,115	878,116	10.70	41,877	35,368	18.40	3,405,245	3,384,273	0.62	152,438	219,875	-30.67	4.48	6.50
Sonat Inc.	735,370	747,598	-1.63	41,608	43,999	-5.43	2,723,881	2,737,696	-0.50	210,223	204,639	2.73	7.72	7.47
Texas Eastern Corp.					·		5,393,045	5,654,353	-4.62	154,577	161,334	-4.19	2.87	2.85
Texas Gas Resources	622,015	627,238	-0.83	26,737	27,399	-2.42	2,262,618	2,304,528	-1.82	79,816	111,268	-28.27	3.53	4.83
TransCanada PipeLines	1,055,300	899,700	17.41	67,500	60,000	12.50	3,470,700	3,466,900	0.11	228,100	198,900	14.68	6.57	5.74
Transco Energy	995,000	1,061,000	-6.22	35,500	22,800	55.70	3,845,000	3,869,000	-0.62	133,000	137,000	-2.92	3.46	3.54
Union Gas Ltd.[3]	369,208	282,025	30.91	18,815	9,536	97.30	801,805	650,526	23.25	27,524	13,669	101.36	3.43	2.10
Total:	10,647,811	10,079,562	5.64	439,000	439,704	-0.20	44,519,729	44,764,086	-0.50	1,859,037	2,134,809	-12.90	4.20	4.80

1 Ends Oct. 31 2 Ends Sept. 30 3 Nine months

nearly 7% as a result of lower petroleum product margins.

Higher natural gas sales due to extremely cold weather and an increase in sulphur volumes took credit for Pennzoil's 14% rise in earnings.

American Petrofina's net income jumped 57% due to improvement in petrochemicals, production, and exploration segments.

Superior Oil's 166% increase reflects generally improved performance for most company operations.

Quaker State Oil Refining reported 26% higher earnings for the fourth quarter due to lower interest cost and taxes.

Callon Petroleum reported earnings of $1.17 million compared to a $150,000 loss in 1982. Higher earnings reflect increases in oil and gas sales and production volumes.

Lower crude oil and condensate prices and volumes, as well as lower natural gas volumes were blamed for Tenneco's 13% drop in net income.

Universal Resources posted a $7.85 million loss due to a $6.19 million (after tax) valuation reserve on the company's drilling rigs.

Anglo Energy's fourth quarter loss of $19.7 million included a provision of $14.4 million for the loss on the sale of Anglo Resources.

FINANCIAL NOTEBOOK

Consumers should not experience appreciably higher energy costs in 1984, despite an expected increase in oil consumption, according to Bank of America's Quarterly Energy Report.

The improved economies of the U.S., Japan, and Europe will trigger additional demand on the world market, but OPEC is expected to hold its price at $29/bbl to avoid losses similar to those brought on last year by the cartel's failure to reach an agreement on production.

The report also says the very slight increase in natural gas prices will not keep pace with inflation and in real terms, will actually decline. Permanent reductions in natural gas consumption by U.S. industries are partly responsible for the drop.

Mergers/acquisitions. Exploration Surveys completed the acquisition of Supreme Corp. for about $10.5 million.

Colorado Interstate (Coastal Corp.) commenced an offer to purchase up to 18.75 million shares of Houston Natural Gas common stock at $68/share.

Marine and Petroleum Equipment (Nantes, France) acquired Anglo Marine and Petroleum Equipment (Shreveport, La.).

ANR Technology (American Natural Resources) will acquire an interest in Nu-Tech Industries.

American Petrofina will purchase Champlin Petroleum's service stations/C-stores in 11 southwest and midwest states.

Minden Oil and Gas and Patton Oil agreed to discontinue merger negotiations.

MidCon (Chicago, Ill.) and Texas Oil & Gas (Dallas, Tex.) completed the acquisition of natural gas pipelines and other assets from seven units of Tatham Pipeline (Houston, Tex.) for $200 million each.

Denver Exploration agreed to acquire Fiesta Energy (Denver, Colo.).

Texaco plans to acquire the U.S. exploration and producing interests of Dome Petroleum (Calgary, Alberta).

Mesa Petroleum and other members of the Gulf Investors Group purchased 675,000 shares of Gulf Oil common stock for about 31.5 million.

Contracts. Texas Gas Gathering entered into a contract with Sun Exploration and Production to purchase all natural gas produced from a 6,400 acre block owned by Sun in Crockett and Val Verde Counties, Texas.

Energy and Resource Consultants (Boulder, Colo.) was awarded a $100,000 contract by Pacific Gas and Electric (San Francisco, Calif.) to analyze the effect of PG&E's Master Meter Conversion program on energy conservation within the utility's service territory.

C-E Lummus (Combustion Engineering) was awarded a contract by FMC Corp.'s Agricultural Chemical Group for the engineering, procurement, and construction of a $40 million plant expansion for the production of Furadan® in Baltimore, Md.

ISI, Inc. (Barnard and Burk Group) was awarded a contract to provide maintenance services at Chevron U.S.A.'s refinery in Salt Lake City, Utah.

Eastern Associated Coal (Eastern Gas and Fuel Associates) and ADDCO Mining agreed to enter into long-term mineral leases and purchase coal mining operations from Appalachian Power (American Electric Power).

Joint ventures. Brown & Root and a unit of Wharton Williams Holdings joined to form a new Dutch company, Deepwater Holdings BV.

A Royal Dutch/Shell Group com-

SPRING 1984 INTERNATIONAL

LAND RIG LOCATOR

Supplement to the March 1984 issue of

Petroleum Engineer INTERNATIONAL

• Drilling Outlook • U.S. & International Contractors
• Contractor Addresses • Rig Locations Worldwide

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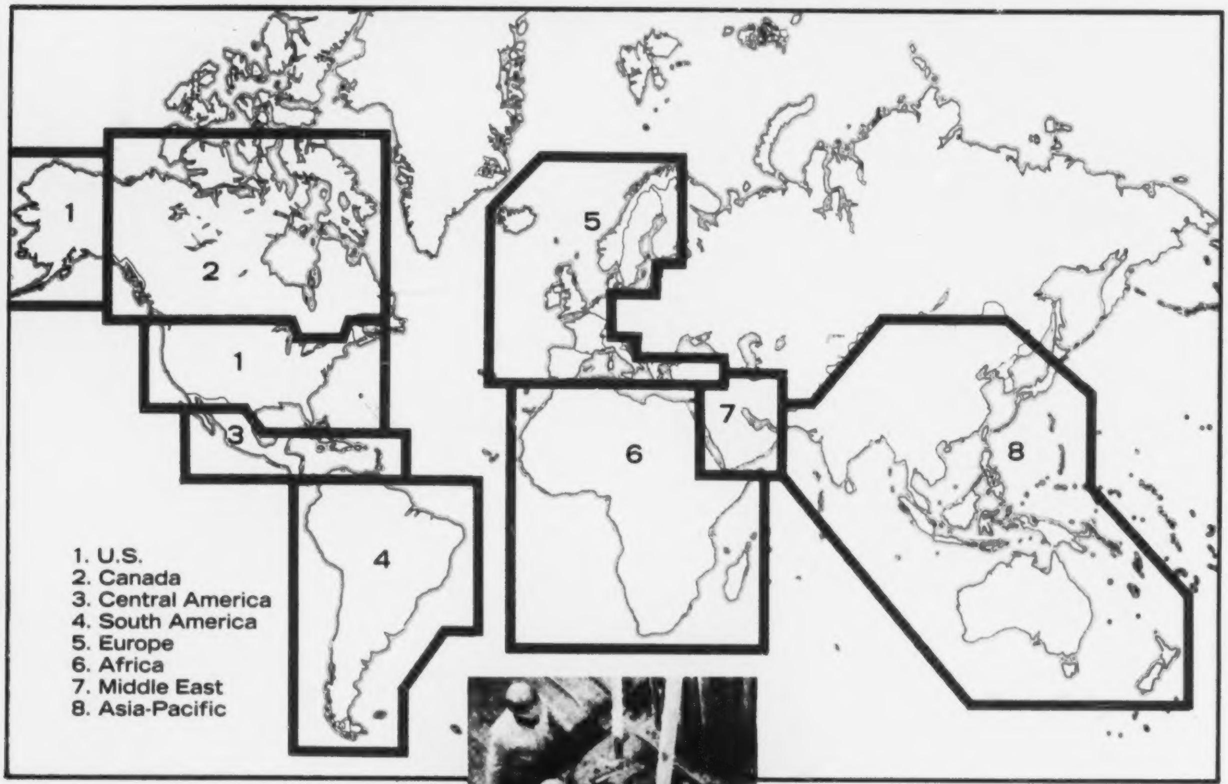
LAND RIG LOCATOR



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International Contract Rotary Land Drilling Rigs R-33

(Photo courtesy of Diamond Shamrock Corp.)

For over a quarter century, drilling contractors have given this magazine Rig Locator data, providing operators who let drilling contracts with mechanical specifications and locations of contract rotary rigs throughout the world. Since the Rig Locator's 1955 origin, other organizations periodically attempt similar concepts, while others shuffle and republish PEI Rig Locator data. This Rig Locator, detailing 4,635 land rigs, is the most complete presentation of contract drilling rigs ever published.

Drawworks Manufacturers Abbreviations

Bethlehem Supply Co.	Beth
Bucyrus-Erie Co.	B-E
Cabot Corp Machinery Div.	Cbot
Cardwell Mfg. Co.	Crdw
Challenger	Chal
Continental Emsco	C-E
Cooper Mfg. Corp.	Coop
DeMag Mfg. Co.	DeMg
Ellis-Williams	E-W
Ewbank Mfg. Div. Inc.	Ewb
George E. Failing Co.	Fail
Foramines	Fora
Gardner-Denver	G-D
Hacker Machine & Supply Co.	Hack
Haniel & Lueg	H-L
Hooper Machine Works Inc.	Hoop
Houston Systems	HS
Howard-Turner Machine Works	HT
Ideco Inc.	Idco
Ingersoll-Rand Co.	I-R
Joy Mfg. Co.	Joy
Justiss-Mears Oil Co.	J-M
Lee, Harold Engineering	Lee
Mayhew Supply Co Inc.	May
Mid-Continent Supply	MC
National Supply Co.	Nat
OIME	OIME
Oilwell Div. (U.S. Steel)	Olwl
OPI Pump Div.	OPI
Quincy Mfg.	Quin
Salzgitter Maschinen Mfg. Co.	Salt
Skytop/Brewster	S/B
Spencer-Harris Machine & Tool Co.	S-H
Superior	Sup
Tri Service Mfg. Co.	TSM
Wagner-Morehouse Inc.	W-M
Walker-Neer Mfg. Co. Inc.	W-N
Weiss Corp.	Weis
Wheland Co.	Whln
Wichtex Machinery Co. Inc.	Wich
Wilson Mfg. Co. Inc.	Wils
Worth Co.	Worth

Drilling Outlook...

by Steve Moore, Drilling Editor

The drilling industry is in a quagmire, caught between stagnant oil and gas prices and corporate buyouts, the latest rage in replacing reserves. And where is all this bartering for companies leading the drilling industry?

Buying reserves will not put a single rig back to work or add one barrel of oil or cubic foot of natural gas to U.S. proven reserves. But it's hard to argue with the strategy when companies can buy reserves on Wall Street for $4 to $8 per barrel. Expect this phenomenon--buying both large and small companies--to continue through November's elections. Many companies feel a Texaco-Getty type of merger can happen only while Reagan is in office.

But eventually oil companies have to get back to the basics of drilling for reserves, as their proven reserves continue to decline. With a strengthening oil and gas market anticipated in 1985 and a push by the majors to replenish their dwindling reserves, drilling activity should pick up faster than many people think.

The bubble is about to burst--the gas bubble, that is. The current gas deliverability surplus will disappear in the next 12 to 24 months, due partially to rapid drawdowns in older reservoirs and drastically reduced gas well drilling activity during the past 2 years. Some analysts project that 40% to 50% of total U.S. natural gas production in 1986 will be supplied from wells not drilled yet.

More worrisome is the decline in U.S. oil reserves. Proven U.S. oil reserves dropped to about 27.3 billion barrels at the end of 1983, down 600 million barrels from 1982. To replace domestic reserves being consumed, the active rig count needs to average over 3,000 rigs this year, which is quite improbable.

The immediate drilling outlook remains cloudy. Demand for drilling rigs and consumables is flat; rig equipment sales are sporadic at best. However, the economic condition of the industry has and will continue to improve. Companies here today will be here tomorrow--they've retrenched and survived.

According to Hughes Tool Co., the rig count averaged 2,780 active rigs in December 1983, nearly 100 more rigs than for the same period in 1982. However, the year-long rig count averaged only 2,232 rigs, compared with 3,105 rigs in 1982. The averages for both years are a far cry from 1981, when the rig count climbed to over 4,500 rigs, with a year-long average of 3,970 rigs.

Since the beginning of 1984 the rig count has dipped again, although not as severely as in the spring of 1983. At press time, the rig count stands at 2,474 active rigs, 250 more rigs than for the same time last year.

In recent weeks, industry analysts have remained quiet as to how far the rig count will fall this spring and how high it will climb in the ensuing months. Forecasts for the coming year's average rig count vary from 2,200 to 2,700 active rigs--most forecasts fall in the 2,450 to 2,600 range.

The seismic crew count remained steady during the latter part of 1983 and no dramatic change is expected this year in seismic activity. Number of well permits, another vital sign for the drilling industry, is showing good improvement. According to Petroleum Information Corp., 1,858 permits to drill oil and gas wells were issued in the U.S. during the last week of January, well above the 1,285 permits recorded for the same period in 1983.

Well completions were down approximately 12% in 1983, compared with the previous year. In all, some 78,000 wells were drilled last year, the third best drilling campaign in history, only behind the record years of 1981 and 1982.

At the same time, 1983's average rig count was off by 30%. One of the reasons for the different percentages of decline in well completions and rig count was the downturn in deep drilling. Last year the average rig completed more wells than in 1982, because of increased shallow drilling. Thus, fewer rigs were required to drill the same number of holes. The trend should continue this year.

Drilling costs were down in 1983, as well. According to PI and the latest available Joint Association Survey cost figures, the average cost per foot to drill a well was about $78, compared with $102 and $87 per foot in 1982 and 1981, respectively. When the serious bout with inflation is considered, the drop in costs is even more substantial.

Preliminary figures also show the average well for 1983 was 4,200 ft deep and costed $327,000 to drill and complete. Average well costs in 1982 and 1981 were $479,500 and $402,170, respectively.

Drilling activity for 1984 will be concentrated in known oil-producing basins. Gas provinces like the deep Anadarko Basin and Tuscaloosa Trend will be slow, with a possible increase in activity only toward year's end. The Permian and Gulf Coast basins look stronger--nearly 15,000 wells were drilled in these two basins last year.

Several interesting wildcat plays could have an impact this year. The Eastern Overthrust Belt has brought operators limited success, but several more years of exploration are required to determine the area's potential. Other keynote areas of interest are Nevada's Great Basin and the Pacific Northwest.

In Canada, the rig count reached 323 active rigs in mid-February, compared with 224 active rigs for the same period last year. Many Canadian rigs brought into the U.S. during the 1981 boom have been shipped back, as the outlook for the Canadian energy industry brightens.

The international picture is bleaker. The international rig count hovered around 1,200 active rigs during the last months of 1983, compared with 1,400 rigs in 1982. The 15% to 20% increase in U.S. drilling activity for 1984 will not carry over into the international arena.

Two important international areas for onshore drilling activity, the Middle East and South America, have numerous problems stifling growth. The limited cash flows of OPEC countries and the international debt crisis have hindered energy related projects from moving ahead. For example, Venezuela cut back drilling operations for its Orinoco heavy oil belt from 6,000 to 3,500 wells over a 6-year period.

All things considered, 1984 should bring stability back to the drilling industry. However, the drilling industry has always been cyclic, and the cycles are getting more volatile.

More significantly, the U.S. no longer controls these cycles. The drilling industry's future booms and busts will be manipulated by foreign governments and international crisis. When and in which direction the next big swing in drilling activity will occur is anyone's guess.

Petroleum
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Drilling Contractors With Rotary Land Rigs in U.S.

A

ACT DRILLING CO PO Box 690 Yukon OK 73099 405-354-7751
ABERCROMBIE DRILLING INC 801 Union Center Wichita KS 67202 316-262-1841
ADECO DRILLING & ENGRG CO 505 2nd St SW Calgary Alberta T2P 1N8 Canada 403-266-6291
AGUILA DRILLING CO 3626 N Hall St Dallas TX 75219 214-521-0021
AIKINS DRILLING CO 151 10th Ave N Shelby MT 59474 406-434-2565
ALANCO DRILLING CO PO Box 1970 Alice TX 78332 512-664-2388
ALASKA UNITED DRILLING INC 5141 Fairbanks St Anchorage AK 99503 907-561-1265
ALDEBARAN DRILLING CO 453 S Webb Rd PO Box 18611 Wichita KS 67207 316-685-5372
ALEXANDER DRILLING INC PO Box 6162 Fort Smith AR 72906 918-436-2491
ALL WESTERN DRILLING PO Box 1518 Vernal UT 84078 801-789-4581
ALLEN DRILLING CO 1105 Walnut PO Box 1389 Great Bend KS 67530 316-793-5681, 3582, 3583
ALLISON BROS DRILLING CO 1275 Sherman St Ste 202 Denver CO 80203 303-861-2228
ALLISON DRILLING CO 1275 Sherman St Ste 202 Denver CO 80203 303-861-2228
AMERICAN WELL SERVICE & DRILLING PO Box 53365 Lafayette LA 70505 318-837-1852
AMERICAN WESTERN ENERGY CORP 14 Sky Ranch Road Aurora CO 80011 303-360-0944
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ANTELOPE DRILLING 6265 E Huerfano Rd Avondale CO 81022 303-948-2201
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AUSTIN DRLG CO (See EXETER DRILLING CO)
AUSTIN-DUNHAM INC (See EXETER DRILLING CO)
AZTEC WELL SERVICE CO PO Box B Aztec NM 87410 505-334-6194

B

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B-E DRILLING CO Rte 5 Box 315 Longview TX 75601 214-758-5406
BJM DRILLING & EXPLORATION INC PO Box 160 Rte 11 Odessa TX 79763 915-563-3025
BAILEY DRILLING CO 700 American Tower Shreveport LA 71101 318-227-8342
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BALTIC DRILLING LTD 901-7015 MacLeod Trail SW Calgary Alberta T2H 2K6 Canada 403-259-5213 403-233-7733
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BASIN DRILLING CORP 900 Oil Center W 2601 Northwest Expy Oklahoma City OK 73112 405-840-2911
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PETER BAWDEN DRILLING INC TEXAS DISTRICT 10200 Richmond Ave Ste 123 Houston TX 77042 713-974-3131
PETER BAWDEN DRILLING LTD 2750 400 Fourth Ave SW Calgary Alberta T2P 0J4 Canada 403-265-1511
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BAYLESS DRILLING CO PO Box 2669 Farmington NM 87499 505-327-7214
BEARD DRILLING CO PO Box 263 Mt Carmel IL 62863 618-262-5194
BEARD DRILLING CO 2000 Classen Center 2000 Classen Blvd Oklahoma City OK 73106 405-524-2664
JACK E BEARDEN DRILLING CO 4605 Jacksboro Hwy PO Box JEBCO Wichita Falls TX 76307 817-767-1474
BENNET PRODUCTION CORP PO Drawer 391 Bowie TX 76230 817-872-1183
BEREDCO INC 401 E Douglas Wichita KS 67202 316-265-2856
BERENTZ DRILLING CO PO Box 428 Eureka KS 67045 316-583-5202
BERGMAN DRILLING INC 520 Union Center Bldg Wichita KS 67202 316-267-5291
BEVERLY DRILLING CO PO Box 446 Logan OH 43183 614-385-8085
BIG 6 DRILLING CO 7500 San Felipe Ste 666 Houston TX 77063 713-783-2300
BIG CHIEF DRILLING CO PO Box 14837 Oklahoma City OK 73113 405-843-5721
BIG SEVEN DRILLING CO 400 Citizens Bldg 115 SE Third St Evansville IN 47708 812-425-3503
BIG SPRINGS DRILLING INC PO Box 8287 Wichita KS 67508 316-681-1732
JAMES BIGARD DRILLING CO 1315 N Mission Rd PO Box 509 Mt Pleasant MI 48858 517-772-5955

B (Cont'd)

BIGHORN DRILLING INC 1625 KSB&T Bldg Wichita KS 67202 316-682-6718
BILBO DRILLING CO PO Box 1099 Victoria TX 77901 512-578-6258
BLACKSTONE DRILLING INC 523 W Kansas PO Box 1184 McPherson KS 67460 316-241-1250
BLOCKER DRILLING CO PO Box 2130 Alice TX 78332 512-664-0114
BLOCKER DRILLING 800 Berring Dr Ste 400 Houston TX 77057 713-974-9100
BLOCKER DRILLING CANADA LTD 11012 Macleod Trail S Ste 800 Calgary Alberta T2J 6A5 Canada 403-278-6050
BODARD & HALE DRILLING CO PO Box 1565 Shawnee OK 74801 405-273-7300
J B BOHANNAN DRILLING INC 2324 N Hwy 83 PO Box 6 Liberal KS 67901 316-624-2202
BONRAY DRILLING CORP Box 340 Rte 4 Oklahoma City OK 73121 405-424-4327
BOW ISLAND DRILLING 700 800 Sixth Ave SW Calgary Alberta T2P 0T8 Canada 403-264-5413 263-1215 955-8722
BRANDT DRILLING INC 1200 Douglas Bldg Wichita KS 67202 316-267-4335
BRAVO DRILLING INC PO Box 1083 Perryton TX 79070 806-435-2869
BRINKERHOFF-SIGNAL INC 3400 Anaconda Tower 555 17th St Denver CO 80202 303-298-1041
BRITTON INDUSTRIES DRILLING 312 N Big Spring Midland TX 79701 915-684-8271
BRUNNER DRILLING CO 1106 N Hwy 360 Grand Prairie TX 75050 214-988-9122
RICK BUCK OIL & GAS CORP (See MARATAN RESOURCES CORP)
BUFFALO DRILLING CO PO Box 911 Wichita KS 67601 913-735-2215 316-265-9686
BUFFALO DRILLING INC 435 Page 220 W Douglas Wichita KS 67202 316-265-9686
L D BURNS DRILLING CO One Parker Square Ste 500 Wichita Falls TX 76308 817-723-0512
BURRIS DRILLING CO 600 N 600-17th St Denver CO 80202 303-892-9718
BURRO DRILLING CO PO Box 4260 Victoria TX 77901 512-578-9021
BUTLER-JOHNSON INC 600 Travis Place Shreveport LA 71101 318-226-0731
BUZZINI DRILLING CO 8700 Crownhill Ste 300 San Antonio TX 78209 512-583-9856

C

C E C DRILLING CO 2601 NW Expwy Ste 1000W Oklahoma City OK 73112 405-840-3356
C M D DRILLING CO 1331 Oakhurst Wichita Falls TX 76302 817-767-8432
CAL PACIFIC DRILLING CO 333 N Lantana St Ste 285 Camarillo CA 93010 805-987-8721
CRC MALLARD WELL INC PO Drawer 51498 OCS Lafayette LA 70505 318-233-4922
CACTUS DRILLING CO 13747 Montfort Ste 300 Dallas TX 75240 214-934-3333
CALIFORNIA PROD SERV INC 19431 S Santa Fe Ave PO Box 4489 Compton CA 90224 213-639-7074
CAPE DRILLING CO PO Box 756 Tyler TX 75710 214-593-8255
CARDINAL DRILLING CO PO Box 1077 Billings MT 59103 406-248-7324
CARTER DEVELOPMENT CORP 8609 NW Plaza Ste 440 Dallas TX 75225 214-521-9580
CARTER LAND & CATTLE CO PO Box 814 Chanute KS 66720 316-431-2080
CHALLENGER DRILLING INC 2515 Kelly Lane Houston TX 77066 713-893-9755
CHAPMAN DRILLING CO (See HANING & YOUNG DRILLING CO)
CHEROKEE DRILLING & DEV CORP PO Box 2381 Midland TX 79702 915-563-1516
CHESLEY PRUET DRILLING CO PO Box 31 El Dorado AR 71730 501-863-7196 601-649-1200
CHEYENNE DRILLING PO Box 916 Garden City KS 67846 316-277-2062
CIMARRON OPERATING CO PO Box 21600 Oklahoma City OK 73156 405-848-2437
CINCO DRILLING CO 2300 Interfirst One Dallas TX 75202 214-741-6031 512-672-7983
CIRCLE C DRILLING CO Rte 4 Box 88 RB Richmond TX 77469 713-341-0922
CLEVELAND DRILLING CO 3131-A Fairhaven Dr Bakersfield CA 93308 805-395-0233
CLIFFS DRILLING CO 2-Allen Center Ste 3150 Houston TX 77002 713-651-9426
COASTAL DRILLING CO 2157 Mohawk St PO Box 5787 Bakersfield CA 93388 805-589-0210
COLEMAN DRILLING CO PO Drawer 3337 Farmington NM 87401 505-325-6892
COLLIER DRILLING CORP PO Box 271 Artesia NM 88210 505-746-3596
COMANCHE DRILLING CO PO Box 636 Cut Bank MT 59427 406-873-5731
COMET DRILLING CO Box 51529 Lafayette LA 70505 318-233-0414
COMPADRE DRILLING & EXPLORATION CORP PO Box 97 Ardmore OK 73402 405-223-3127
CONTINENTAL DRILLING CO PO Box 8569 Tyler TX 75701 214-877-3151
CORKY DRILLING CORP PO Box 1267 Big Spring TX 79721-1267 915-263-3660
CORPUS CHRISTI DRILLING CO PO Box 8400 Corpus Christi TX 78412 512-852-7642
COTHRUM DRILLING CO PO Box 18207 Dallas TX 75218 214-321-9115
CRAWFORD DRILLING CO Rte 3 Box 254 Brenham TX 77833 512-451-6447
CRESCENT DRILLING CO Calhoun Rd PO Box 626 Owensboro KY 42301 502-926-4656
CULVER DRILLING CO PO Box 75382 Oklahoma City OK 73147 405-324-6000
CYCLONE DRILLING INC PO Box 908 Gillette WY 82716 307-682-4161

D

D & D DRILLING CO PO Box 351 Ferriday LA 71334 318-757-3274
D & R DRILLING INC PO Box 4431 Odessa TX 79760 915-563-3550
D B DRILLING CORP 100 Chestnut Suite 200 Abilene TX 79602 915-672-2841
DNB DRILLING INC 515 RH Garvey Bldg Wichita KS 67202 316-687-5471
DAHLQUIST DRILLING INC PO Box 602 Bakersfield CA 93302 805-327-1275
DAMAC DRILLING INC PO Box 1164 Great Bend KS 67530 316-792-1353
D L DAVIS DRILLING CO PO Box 570 Rte 1 N Mt Carmel IL 62863 618-263-4316
DEAN DRILLING CO PO Box 327 Cherokee OK 73728 405-596-3509
DECCA DRILLING CO 700 American Tower Shreveport LA 71101 318-227-8342
DELTA DRILLING CO PO Box 2012 Tyler TX 75710 214-595-7700
DEVONIAN DRILLING CO 500 W Wilson Bridge Rd Ste 300 Worthington OH 43085 614-885-2268

D (Cont'd)

DIAMOND M LAND DRLG PO Box 45858 Houston TX 77045 713-490-5300
DIATOM DRILLING CO PO Box 5004 Borger TX 79008-5004 806-273-3763
DIXILYN-FIELD DRILLING CO PO Box 4251 Houston TX 77210 713-877-8650
DIXON DRILLING CO PO Box 2773 Abilene TX 79604 915-676-8564
DOUGLAS DRILLING INC PO Box 3775 Abilene TX 79604 915-676-5551
DRILCON INC 9099 Westheimer Ste 309 Houston TX 77063 713-780-8772
DRILLERS INC 5629 FM 1960 W Ste 202 Houston TX 77069 713-893-1020
DRILLTECH INC 2 Northpark E Ste 800 PO Box 31350 Dallas TX 75231 214-369-6699 214-363-9705
DUAL DRILLING CO PO Box 240 Wichita Falls TX 76307 817-723-2127
DUKE DRILLING CO PO Box 823 Great Bend KS 67530 316-793-8366
DUNNE-GARDNER PETROLEUM INC 200 W Douglas Ste 250 Wichita KS 67202 316-265-1611

E

E & H DRILLING CO PO Box 1058 Graham TX 76046 817-549-0370
EAGLE DRILLING INC PO Box 8609 Wichita KS 67208 316-682-5513
EARL & SONS DRILLING INC Box 3 Cedar Crest NM 87008 505-281-3880
EASON OIL CO Sub of ITT 2601 NW Expwy Oil Center East Ste 1100E Oklahoma City OK 73102 405-848-8711
EDCO DRILLING CO PO Box 645 El Dorado KS 67042 316-321-9285
EDWARDS WELL SERV 7001 Fruitvale Extension Bakersfield CA 93308 805-589-0111
ELENBURG EXPLORATION INC Hwy 2 W PO Box 1850 Havre MT 59501 406-265-5811
ELJAY DRILLING CORP 8955 Katy Fwy Ste 101 Houston TX 77024 713-932-6771
ENERGY DRILLING CO PO Box 905 Natchez MS 39120 601-446-5259
ENERGY OPERATING CORP (See ENOPCO)
ENERGY SEARCH DRILLING CO PO Box 190 Farmington NM 87401 505-326-1135
ENERGY SERVICES CORP (See ESCOR)
ENOPCO 12201 Merit Dr Ste 1100 Dallas TX 75251 214-387-2805
EQUITY DRILLING CO PO Box 40 Dewey OK 74029 918-534-1700
ESCOR 4273 Corporate Way Mt Pleasant MI 48858 517-773-4922
EXCELL DRILLING CO 6475 Wadsworth Blvd Ste 115 Arvada CO 80003 303-332-3148
EXETER DRILLING CO 210 W Park Ave Ste 2670 First Oklahoma Tower Oklahoma City OK 73102 405-235-9969
EXETER DRILLING CO Northern Division PO Box 17349 TA Denver CO 80217 303-861-0181
EXETER DRILLING CO INC Southern Division 144 Elk Place Ste 1502 New Orleans LA 70112 504-581-1498
EXPLORER DRILLING CO PO Box 53897 Lafayette LA 70505 318-988-2590 318-232-8387

F

F & N DRILLING CO PO Box 6854 Odessa TX 79762 915-367-1028
FWA DRILLING CO PO Box 419 Wichita Falls TX 76307 817-322-0761
FAIRMAN DRILLING CO PO Box 288 Dubois PA 15801 814-371-8410
FAITH DRILLING CO PO Box 7 Houston TX 77001 713-524-7411
FALCON DRILLING CO 1700 SE 22 Second Oklahoma City OK 73129 405-670-3161
JOHN O FARMER INC PO Box 352 Russell KS 67665 913-483-3144
FAULK DRILLING CO PO Box 429 Breckenridge TX 76024 817-559-3744
FELDERHOFF BROS DRILLING CO PO Box 739 Gainesville TN 76240 817-665-0396
FISCUS DRILLING CO Rte 1 Box 572-A Big Spring TX 79720 915-393-5211
FOREX NEPTUNE AND/OR AFFILIATES 50 Ave Jean-Jarves BP 599 92542 Montrouge Cedex France 657 11 07
FORWEST INC 910 16th St Ste 408 Denver CO 80202 303-573-1661
FOSSIL DRILLING CORP 6 NE 63rd Ste 315 Oklahoma City OK 73105-1496 405-840-9255
FOUR CORNERS DRILLING CO PO Box 1067 Farmington NM 87401 505-327-0322
FRANCE DRILLING CORP (See GRACE FRANCE DRILLING)
FRANKLIN DRILLING INC PO Drawer 1237 Graham TX 76046 817-549-5661
FREEMAN DRILLING CO 251 N Water Ste 10 Wichita KS 67202 316-263-7049
FRIO DRILLING CO 1216 Guaranty Bank Plaza Corpus Christi TX 78475 512-883-8555

G

GCO DRILLING CO PO Box 3134 Abilene TX 79604 915-695-9410
GABBERT-JONES INC 830 Sutton Place Wichita KS 67202 316-263-6209
GALLAGHER DRILLING INC PO Box 3046 Evansville IN 47730 812-425-8256
GALLOWAY DRILLING CO 340 Broadway Plaza Bldg 105 S Broadway Wichita KS 67202 316-263-1793
GARNETT DRILLING LTD 814-603 Seventh Ave SW Calgary Alberta T2P 2T5 Canada 403-262-7906
GARY DRILLING CO 7001 Fruitvale Extension Bakersfield CA 93308 805-589-0111
GIBSON DRILLING CO PO Box 1540 Kilgore TX 75662 214-984-5068
J W GIBSON WELL SERVICE CO 3025 S Parker Rd Ste 711 Aurora CO 80014 303-752-2527
GLENDEL DRILLING CO 2761 Old Erath Rd PO Box 765 Abbeville LA 70511-0765 318-898-1637
GLOBE DRILLING CO 1212 The Peoples Plaza Tower Tyler TX 75702 214-593-0281
GOLDEN STATE DRILLING INC 3312 Fruitvale Ave Bakersfield CA 93308 805-589-0730
GOLDRUS DRILLING CO PO Box 4394 Houston TX 77210 713-658-9271
GRACE BOMAC DRILLING 10403 W Colfax Ste 700 Lakewood CO 80215 303-234-1444
GRACE FRANCE DRILLING Div TRG Drilling Corp 700 Travis Place Shreveport LA 71101 318-221-3434
GRACE MILLER DRILLING Rte 5 Box 450 Fort Smith AR 72901 501-646-3481
GRACE/TRG DRILLING CO 3300 NE 60th St Oklahoma City OK 73121 405-478-4880
GRAND DRILLING 920 Hamilton Bldg Wichita Falls TX 76301 817-723-2422
GRAVES DRILLING CO 910 Union Center Wichita KS 67202 316-265-7233
GREAT SOUTHERN OIL & GAS CO PO Box 52707 Lafayette LA 70505 318-233-4400
GREY WOLF DRILLING CO 2000 S Post Oak Rd Ste 1730 Houston TX 77056 713-626-1373
GUFFEY-SCHLENSKER DRILLING CORP PO Box 1330 Richardson TX 75080 214-231-8551
GWALTNEY DRILLING CO PO Box 520 Washington IN 47501 812-254-5085

H

H & S DRILLING CO 320 S Boston Ste 2000 Tulsa OK 74103 918-587-8163
H S ENERGY/SENIOR DRILLING CO (See SENIOR DRILLING)
H-30 DRILLING INC 251 N Water Ste 10 Wichita KS 67202 316-263-2043
HACK DRILLING CO PO Box 5108 Abilene TX 79608 915-692-4111
HAMM DRILLING INC One Perry Plaza Box 17 Perry KS 66073 913-597-5111
HANING & YOUNG DRILLING CO 2910 Holmes Rd Houston TX 77051 713-734-5555
HARKINS & CO PO Box 1940 Alice TX 78332 512-664-3427
HARPEL DRILLING CO PO Box 2811 Casper WY 82602 307-265-9193
HARRIS DRILLING CO Box 99 Hwy 15 Grayville IL 62844 618-375-2211
HARRIS WELL SERVICE INC PO Drawer 949 Eunice LA 70535 318-457-3376
H F HATCHER & SON PO Box 167 Smackover AR 71762 501-725-2436
HEARTLAND DRILLING INC 600 One Main Place Wichita KS 67202-1399 316-265-9723
HELMERICH & PAYNE INTL DRILLING Utica at 21st St Tulsa OK 74114 918-742-5531
HENLEY DRILLING CO 2900 First Natl Bank Bldg Ste 2420 Dallas TX 75202 214-749-0847
HERB EXPLORATION PO Box 1934 Abilene TX 79604 915-672-1291
HICKMAN DRILLING CO PO Box 1467 Woodward OK 73801 405-256-8688
W B HINTON DRILLING CO 1805 N Jefferson St Mt Pleasant TX 72455 214-572-8777
HOLLIDAY DRILLING INC PO Box 3489 Midland TX 79702 915-697-2208
HONDO DRILLING CO PO Drawer 2516 Midland TX 79702 915-682-9401
HOUTECH DRILLING 10701 Corporate Dr Ste 230 Stafford TX 77477 713-494-5151
HOWELL DRILLING INC 635 Milam Bldg San Antonio TX 78205 512-227-5283
LEONARD HUDSON DRILLING CO PO Box 1876 Pampa TX 79065 806-665-1816
HUGHES DRILLING CO Box 6001 Enid OK 73702 405-234-7222
HUNNICUTT CAMP DRILLING CO PO Box 399 Rio Vista CA 94571 707-374-2425 805-327-3948
CLINT HURT & ASSOCIATES INC PO Box 1973 Midland TX 79702 915-683-6381
HUSKY DRILLING CO 555 N Woodlawn Ste 114 Wichita KS 67208 316-685-7677
HUSSAR DRILLING (See Concept Resources Ltd)
HYLTON DRILLING CO 7700 Downing Rd Bakersfield CA 93308 805-589-2062

I

IMPERIAL DRILLING CO Suite 291 Century Center Plaza 100 W Main St Oklahoma City OK 73102 405-236-2001
INTERNATIONAL PETROLEUM SERV CO Rte 6 N PO Box 547 Sheffield PA 16347 814-968-3295
IRON DRILLING CO 3201 S Van Buren PO Box 3525 Enid OK 73701 405-234-1292

J

J & C DRILLING CO PO Box 216 Refugio TX 78377 512-526-2376
J & W DRILLING CO Rte 3 Gorman TX 76454 817-734-2665
J 3 DRILLING CO First City Bank Tower Corpus Christi TX 78477 512-881-9773
J W DRILLING CO 200 E First St Ste 500 Wichita KS 67202 316-263-5924
J-V DRILLING CO 4445 Commerce St Evansville IN 47710 812-424-3571
JFP WELL SERVICE INC 14425 Torrey Chase Blvd Suite 300 Houston TX 77014 713-893-4464
JHJ DRILLING CO 333 North Belt East Ste 620 Houston TX 77060 713-999-4980
JAY-LAN CORP 207 W 12th St Hays KS 67601 913-628-1316
JOHNN DRILLING CO PO Box 6189 Odessa TX 79762 915-563-1280
JOHNSON-BATES DRILLING CO PO Box 128 Konawa OK 74849 405-925-3256
JONES DRILLING CO PO Box 665 Albany TX 76430 915-762-3652
LOYD JONES DRILLING CO PO Box 816 Perryton TX 79070 806-435-6871
JONES DRILLING CORP PO Box 1185 Duncan OK 73533 405-255-1191
JUSTISS OIL CO PO Drawer N Jena LA 71342 318-992-4111

K

K B DRILLING CO PO Box 1848 Harve MT 59501 406-265-1407
K B DRILLING & PRODUCTION INC PO Box 1244 Taft CA 93268 805-763-5106
KCA DRILLING LTD KCA House 227 Shepherds Bush Rd London W6 7AS England 01-741-4811
KANDRILCO INC Bldg 1 Ste 207 555 N Woodlawn Wichita KS 67208 316-681-1623
KANSAS DRILLING & WELL SERV INC 203 S Third Marion KS 66861 316-382-3734
KAY DRILLING CO PO Box 1622 Ponca City OK 74602 405-765-2406
KELLEY & KERR DRILLING CO 15119 Memorial Dr Ste 100 Houston TX 77079 713-870-8774
K L KELLOGG & SONS 4[illegible]20 Long Beach Blvd PO Box 7053 Long Beach CA 90807 213-422-1247
KENAI DRILLING OF NEW MEXICO INC PO Box 1636 Hobbs NM 88241-1636 505-392-7528
KENAI DRILLING OF TEXAS INC PO Box 6725 Odessa TX 79767 915-362-2323
KENAI DRILLING WEST COAST INC PO Box 2248 Orcutt CA 93454 805-928-1701
KENDALL DRILLING CO 3112 E Powell Evansville IN 47715 812-477-5535
KENTING DRILLING CO LTD One Denver Place Ste 220 999-18th St Denver CO 80202 303-893-1383
KING DRILLING CO Rte 1 Box 9 Canadian TX 79104 806-323-6664
KINGERY DRILLING CO PO Box 1588 Ardmore OK 73401 405-223-6823

L

L & G DRILLING CO PO Box 35 Mt Pleasant MI 48858 517-772-3083
L & M DRILLING INC PO Box 470 Artesia NM 88210 505-748-2205
L & R DRILLING CO PO Box 936 Pierre SD 57501 605-224-8393
L D DRILLING CO PO Box 324 Great Bend KS 67530 316-793-3051
LLL DRILLING CO PO Box 188 Bloomfield NM 87413 505-632-8045
LA RUE DRILLING CO PO Box 202 Artesia NM 88210
LADRIDO DRILLING CO 4600 W Hwy 80 Midland TX 79703 915-694-2546
LAGERSEN DRILLING CO 302 Beck Bldg Shreveport LA 71101 318-227-9939
LANDIS DRILLING CO One Marienfeld Place Ste 350 PO Box 3579 Midland TX 79703 915-683-4151
LANEX DRILLING CO 4013 NW Expwy Oklahoma City OK 73116 405-840-5022
LEROY LANGE DRILLING CO 1102 Montana Big Lake TX 76932 915-465-4751
D R LAUCK OIL CO 221 S Broadway Ste 400 Wichita KS 67202 316-263-8267
LEBEN DRILLING CO 105 S Broadway Ste 640 Wichita KS 67202-4260 316-264-2375

L (Cont'd)

LEE DRILLING INC 4802 Derrick Dr Abilene TX 79601 915-677-3566
LEEMAN DRILLING CO 1400 Fifty Penn Place Oklahoma City OK 73118 405-842-1622
DAN LESTER DRILLING CO PO Drawer N Jefferson TX 75657 214-665-2511
LITTLE-DEUTAG DRILLING INC 2007 N Commerce PO Box 1509 Ardmore OK 73402 405-226-7620
LOFFLAND BROS CO PO Box 2847 Tulsa OK 74101 918-622-9330
LOGAN DRILLING CO PO Box 1622 Enid OK 73702 405-233-5048
LOHMANN DRILLING CO 18 NW 45th St Evansville IN 47708 812-428-4180
J ROY LOHMANN INC 18 NW 45th St Evansville IN 47708 812-428-4180
LORD DRILLING CO 14618 W Sixth Ave Golden CO 80401 303-279-2471
LOUISE DRILLING CO PO Box 272 Louise TX 77455 409-648-2641
LOWE DRILLING CO PO Box 1368 Albany TX 76430 915-762-2530
LUKE GRACE CO 710 Petroleum Bldg PO Box 5371 Wichita Falls TX 76307 817-723-2187
LYNX DRILLING CO PO Box 13300 Arlington TX 76013 817-261-4181

M

M G F DRILLING CO-HOUSTON 2626 Richmond Houston TX 77098 713-526-7236
M G F DRILLING CO-LAFAYETTE PO Box 938 Scott LA 70583 318-237-6161
M G F DRILLING CO-MIDLAND PO Box 6370 Midland TX 79701 915-563-4850
M N D DRILLING CORP-NORTHERN DIV PO Box 248 Bridgeport TX 76026 817-683-5106
M N D DRILLING CORP-SOUTHERN DIV PO Box 109 Magnolia TX 77355 713-356-8280
MOXA DRILLING CO 106 W Eighth McCook NE 69001 308-345-2945
MAGEE-POOLE DRILLING CO PO Box 2000 Alice TX 78332 512-664-1891
MAGIC CIRCLE DRILLING CO 4141 Northwest Expwy Oklahoma City OK 73116 405-843-6654
R L MANNING CO 1700 Broadway Ste 2200 Denver CO 80290 303-839-1977
MAR-TAY DRILLING CO PO Box 1216 Drumright OK 74030 918-352-3802
MARATAN RESOURCES CORP 2525 Northwest Expy Oklahoma City OK 73112 405-848-2866
MARION DRILLING & SERVICES CO PO Box 3027 Mobile AL 36652 205-626-3924
MARLIN-WEST DRILLING CO 3025 Gibson St PO Box 551 Bakersfield CA 93302 805-327-8304
MAXWELL DRILLING CO PO Box 1679 Bowie TX 76230 817-872-5455
MAXWELL HERRING DRILLING CORP PO Box 1297 Tyler TX 75710 214-593-1737
McALLISTER DRILLING INC 251 North Water Ste 10 Wichita KS 67202 316-263-6972
McBAY OIL & GAS INC PO Box 1085 Crockett TX 75835 409-544-5168
J W McCUTCHEN DRILLING CO 912 Oil & Gas Bldg Wichita Falls TX 76301 817-322-9231
McLENNAN DRILLING CO PO Box 6 Nowata OK 74048 918-273-1265
McMURREY PETROLEUM INC PO Box 1899 Kilgore TX 75662 214-984-3578
McVAY DRILLING CO 308 Philtower Bldg Tulsa OK 74103 505-397-3311
MEGARGEL DRILLING CO PO Box 356 Megargel TX 76370 817-563-2311
MELLON DRILLING CO 133 W Concho Ste 103 San Angelo TX 76901 915-655-8951
MELTON DRILLING CO 7101 Downing Ave Bakersfield CA 93308 805-587-0521
MENDENHALL DRILLING CO PO Box 302 Lamont OK 74643 405-388-4444
MERCURY DRILLING CO 1701 SE 25th St Oklahoma City OK 73129 405-672-4441
MESA DRILLERS PO Box 108 Lubbock TX 79408 806-794-3248
MESA DRILLING CO PO Box 1481 Abilene TX 79601 915-673-4787
MID-AMERICA DRILLING & EXPL INC (See PRAIRIE STATES EXPL INC)
MID ATLANTIC OIL CO DRILLING DIV PO Box 198 Belle Valley OH 43717 614-732-5674
MILLER CONTRACT DRILLING INC PO Box 478 Livingston TN 38570 615-823-6425
MILLER DRILLING CO (See GRACE MILLER DRILLING CO)
MILLER EXPLORATION CORP PO Box 246 Allegan MI 49010 616-843-8331
MIN-TEX DRILLING CORP (See SUN COUNTRY DRILLING & EXPLORATION)
GEORGE N MITCHELL DRILLING CO Airport Rd PO Drawer 111 Carmi IL 62821 618-382-2343
MOLEN DRILLING CO Grand Bldg Ste 500 PO Box 2222 Billings MT 59103 406-252-2591
MONTEREY DRILLING CO 11 W Del Mar Ste 203 Pasadena CA 91105 805-327-3948
MONTGOMERY DRILLING CANADA LTD 960-700 Fourth Ave SW Calgary Alberta T2P 3J4 Canada 403-290-1644
MONTGOMERY DRILLING CO PO Box 2508 Bakersfield CA 93303 805-393-9620
MORAN BROS INC PO Box 4502 Houston TX 77210 713-820-1865
E W MORAN DRILLING CO PO Box 7519 Wichita Falls TX 76307 817-691-3000
MORANCO PO Box 1860 Hobbs NM 88240 505-397-3511
MORRISON DRILLING & PRODUCING CO One Energy Square Ste 1-LB Abilene TX 79601 915-677-8523
MOSLEY WELL SERVICE INC PO Box 970 Minden LA 71055 318-377-2393
MURCO DRILLING CORP 1900 Beck Bldg Shreveport LA 71101 318-221-7373
MURFIN DRILLING CO 617 Union Center Bldg Wichita KS 67202 316-267-3241
MURLYNSON DRILLING CO PO Drawer 1876 Alice TX 78333 512-664-4540
PETE MURPHY DRILLING CO PO Drawer 1876 Alice TX 78333 512-664-3807

N

N R G DRILLING INC PO Box 1157 Liberal KS 67901 316-624-1818
NECK DRILLING CO Bin X Taft CA 93268 805-769-8811
NL WELL SERVICE PO Box 488 Abbeville LA 70510 318-893-3486
NABORS ALASKA DRILLING INC Anglo Energy Co 4300 B St Ste 600 Anchorage AK 99503 907-561-4440
NABORS DRILLING LTD 324 Eighth Ave SW 1107 Home Oil Tower Ste 1107 TD Square Calgary Alberta T2P 2Z2 Canada 403-263-6610
NELSON DRILLING & WELL SERV 2100 Louisiana Tower Shreveport LA 71101 318-221-6890
DAVID NEW DRILLING CO PO Drawer 1487 Natchez MS 39120 601-442-1607
NEW JERSEY DRILLING CO Rte 206 Box 8 Netcong NJ 07857 201-347-2269
NEW PROSPECT DRILLING CO PO Box 729 Greenwood AR 72936 501-996-6791
NICKLOS DRILLING CO PO Box 752 Eunice LA 70535 318-457-8103
NICOR DRILLING CO 500 Reunion Center 9 E Fourth St Tulsa OK 74103 918-587-5507
NIXON DRILLING CO 201 S Laurel St PO Box 632 Luling TX 78648 512-875-2416
NOBLE DRILLING CORP 1924 S Utica Ste 600 Tulsa OK 74104 918-749-9901
JAMES R NORMAN DRILLING CO Rte 3 Box 391 Dickson TN 37055 615-645-4361

N (Cont'd)

NORTON DRILLING CO 606 Lubbock National Bank Bldg Lubbock TX 79401 806-747-3324
A N NORWOOD INC PO Box 310 Midland TX 79702 915-683-3972
NOWOTNY & CONLEY DRILLING CORP 1700 Buckner Square Ste 200 Shreveport LA 71101 318-227-0442

O

ELMER OELZE JR RR 1 Box 148 Nashville IL 62263 618-327-3807
OILWELL DRILLING INC (See Tommy's Oilwell Drilling Inc)
OLSEN DRILLING CO 1616 Glenarm Place Ste 1305 Denver CO 80202 303-893-2221
ONEOK DRILLING CO 7060 S Yale Tulsa OK 74153 918-494-8725
O'NEAL DRILLING CO PO Box 4660 Fort Worth TX 76106 817-625-8246
ORIGINALA DRILLING CO 956 S Main Jacksboro TX 76056 817-567-3991
OWEN DRILLING CO PO Box 861 Magnolia AR 71753 501-234-6300
JACK OWENS SERV CO 1626 Del Dayo Dr Carmichael CA 95608 916-485-8995

P

P E P DRILLING CO 123 S 10th PO Box 824 Mt Vernon IL 62864 618-242-2205
PRC DRILLING CO PO Box 1121 Corpus Christi TX 78403 512-289-6763
PADRE DRILLING CO PO Box 9925 Corpus Christi TX 78469 512-241-2871
PAR-CO DRILLING INC PO Box 873 Natchez MS 39120 601-442-6421
PARKER DRILLING CO 8 E Third St Tulsa OK 74103 918-585-8221
PEARL EXPLORATION INC PO Box 2179 Alice TX 78332 512-664-2605
PENROD DRILLING CO 2200 Thanksgiving Tower Dallas TX 75202 214-880-1700
PETERS DRILLING INC PO Box 742 Great Bend KS 67530 316-793-6721
PHELPS DRILLING CO LTD #800 11012 Macleod Trail S Calgary Alberta T2J 6A5 Canada 403-278-6050
PICKRELL DRILLING CO 110 N Market Ste 205 Wichita KS 67202 316-262-8427
PILGRIM DRILLING CO 6733 S Yale Ave PO Box 35588 Tulsa OK 74136 918-494-0944
PLOTNER DRILLING CO 8101 NW 10th St Oklahoma City OK 73127 405-787-7234
GENE PORTER DRILLING CO PO Box 309 Cushing OK 74023 918-225-1563
POWER RIG DRILLING CO PO Box 52808 Lafayette LA 70505 318-234-4525
POZOS INTERNATIONAL DRILLING SERVICES CO 9 Pozos Lane PO Box 3339 Conroe TX 77305 409-756-4161
PRECISION EXPL CO PO Box 278 Olney IL 62450 618-395-8448
J A PRICE & CO PO Box 4435 Odessa TX 79760 915-563-3139
T D PROVINS DRILLING CO 2113 Enterprise Dr PO Box 668 Mt Pleasant MI 48858 517-773-6946
PRUET-RAM CO PO Box 31 El Dorado AR 71730 501-863-3612
PYRAMID OIL WELL SERV PO Box 3225 Santa Fe Springs CA 90670 213-944-6703

Q

QUANZA DRILLING INC 3824 N Meridian Ste 110 Oklahoma City OK 73112 405-942-7900
QUARLES DRILLING CORP 7633 E 63 Place Suite 500 Tulsa OK 74133 918-250-0515

R

R R A INC 510 Hardage Center Wichita KS 67202 316-262-3411
R RIGS INC PO Box 99 Quinlan TX 75474 214-563-6771
R W I T DRILLING CO 324 W Main PO Box 551 Holdenville OK 74848 405-379-5491
R & G DRILLING Sub Rine Drlg 300 W Douglas Ste 600 Wichita KS 67202 316-267-1333
RDC/FINLEY (See Republic Drilling Co)
RAINBOW DRILLING CO 1108 N Kilgore St PO Box 1779 Kilgore TX 75662 214-984-5095
RAINS & WILLIAMSON OIL CO 435 Page Court 220 W Douglas Wichita KS 67202 316-265-9686 913-735-2215 913-625-7976
RAM DRILLING CO PO Box 118 Browns IL 62818 618-446-5117
RANGE DRILLING CO 240 Page Ct 220 W Douglas Wichita KS 67202 316-265-6231
RAPAD DRILLING CO PO Box 31 El Dorado AR 71730 501-863-7196
RATLIFF DRILLING CO PO Box 988 Duncan OK 73533 405-255-2916
RAY RESOURCES CORP PO Box 203 Culloden WV 25510 304-743-9067
REBEL RIG #3 LTD PO Box 1151 Natchez MS 39120 601-446-7831
RED TIGER DRILLING CO 1720 Kansas State Bank Bldg Wichita KS 76202 316-263-2371
REMCO DRILLING 3000 E Hwy 80 Haughton LA 71037 318-949-4103
REPUBLIC DRILLING CO PO Box 2945 Santa Fe Springs CA 90670 213-595-4505
RESOURCE DRILLING INC PO Box 4341 Houston TX 77210 713-871-8550
RICHARDS-ARMSTRONG INC PO Box 1149 Bay City TX 77414 409-245-8389
RICHARDS DRILLING CO PO Box 1149 Bay City TX 77414 409-245-8389
RICHARDS DRILLING LTD PO Box 1149 Bay City TX 77414 409-245-8389
RICHARDS DRILLING ASSOC PO Box 1149 Bay City TX 77414 409-245-8389
RILEY DRILLING CO 907 Scurry Big Spring TX 79720 915-394-4454
RINE DRILLING CO 300 W Douglas Ste 600 Wichita KS 67202 316-267-1333
RIO COLORADO DRILLING CO 330 North Belt E Ste 100 Houston TX 77060 713-445-2231
RIO GRANDE DRILLING CO 2300 Tower Life Bldg San Antonio TX 78205 512-224-4572
ROBERSON DRILLING CO PO Box 1966 Ardmore OK 73402-1966 405-223-1277
ROBINSON BROS DRILLING CO 1413 25th St Woodward OK 73801 405-254-3361
ROBINSON DRILLING OF TEXAS PO Box 311 Big Spring TX 79720 915-267-5277
ROCKHOLD ENGINEERING INC PO Box 698 Great Bend KS 67530 316-792-2506
ROCKWELL DRILLING CO PO Box 993 400 W Fifth St Holdenville OK 74848 405-379-5414
ROD RIC CORP PO Box 10847 Midland TX 79702 915-682-7880
J B RODEN DRILLING CO PO Box 880 Mills WY 82644 307-266-6552
MIKE ROGERS DRILLING CO PO Box 126 Magnolia AR 71753 501-234-2322
ROSAMOND DRILLING CO 1300 Main Ste 1800 Houston TX 77002 713-951-9155
ROWAN DRILLING-US 1900 Post Oak Tower Bldg 5051 Westheimer Houston TX 77056 713-621-7800
ROYAL DRILLING INC PO Box 1971 Ada OK 74820 405-332-1426
ROYCO DRILLING CO PO Box 681 Owensboro KY 42301 502-685-3687 502-229-4936

S

S & T DRILLING LTD PO Box 4890 Edmonton Alberta T6E 5G7 Canada 403-955-7011
SEE LAND DRILLING CORP PO Box 311 Magnolia MS 39652 601-249-3060
SH & J DRILLING CORP PO Drawer 888 Magnolia AR 71753 501-234-4600
SABRE DRILLING CO G[illegible]e Sabre Drilling 3300 NE 60th Oklahoma Cirty OK 73121 405-478-1757
SABRE DRILLING INC 1215 24th St W #220 Billings MT 59102 406-656-0730
SAFARI DRILLING CORP PO Box 3236 Abilene TX 79604 915-677-2826
SAGE DRILLING CO 202 S St Francis Wichita KS 67202 316-263-6139
SAN PATRICIO CORP PO Box 966 Corpus Christi TX 78403 512-289-6717
SANDIA DRILLING CO 2500 Broadway Bldg Edmond OK 73034 405-348-7442
SANTA FE DRILLING CO PO Box 1401 Orange CA 92669 714-558-1300
SAWYER DRILLING & SERV INC 1300 American Tower Shreveport LA 71101 318-949-3282
SCANDINAVIAN MONTGOMERY DRILLING PO Box 2508 Bakersfield CA 93303 805-327-5736 805-393-9620
SCHLENSKER DRILLING CORP PO Box 1330 Richardson TX 75080 214-231-8551
DON SCOTT DRILLING CO PO Box 177 Jonesville MI 49250 517-849-9237
JERRY SCOTT DRILLING CO 319 N Harvey Rd PO Box 1488 Seminole OK 74868 405-382-2202
SEALY & CO PO Box 407 Breckenridge TX 76024 817-559-6543
SEARCH DRILLING CO 1900 First Oklahoma Tower 210 W Park Ave Oklahoma City OK 73102 316-682-7526
SENECA DRILLING CO 100 NW 63rd St Oklahoma City OK 73116 405-848-3388
SENIOR DRILLING CO 5454 LaSierra Ste 200 Dallas TX 75231 214-363-7163
SERVICE DRILLING CO PO Box 5320 Borger TX 79007-5320 806-273-7573
SHARP DRILLING CO PO Box 1271 Midland TX 79702 915-683-3384
SHELBY DRILLING 5350 S Roslyn Ste 300 Englewood CO 80111 303-740-2200
R H SHELDON & SON INC 13213 TR 50 Dunkirk OH 45836 419-759-2351
SHIELDS DRILLING CO PO Box 709 Russell KS 67665 913-483-3141
SHULER DRILLING CO 3514 W Hillsboro El Dorado AR 71730 501-863-7234
SIERRA DRILLING CO PO Box 2661 Midland TX 75231 214-363-7163
SIGNAL OILFIELD SERVICE INC 1616 Glenarm Place Ste 1200 Denver CO 80202 303-298-1050
SIMMONS DRILLING INC 2000, 1616 Glenarm Pl Denver CO 80202 303-825-3985
SITTON DRILLING CO 916 Main Ste 503 Republic Bank Bldg Lubbock TX 79401 806-763-4442
SLAWSON DRILLING CO 200 Douglas Bldg Wichita KS 67207 316-263-3201
SLOAN DRILLING CO 2825 E Skelly Dr Ste 827 Tulsa OK 74105 918-745-6570
SMART DRILLING CO (See ONEOK DRILLING CO)
SMITH BROTHERS DRILLING CO 5208 W Reno Ste 250 Oklahoma City OK 73127 405-943-0165
SMITH DRILLING CO Rte 1 S PO Box 150 Lawrenceville IL 62439 618-943-2342
CARL E SMITH PETROLEUM INC PO Box 4 Sandyville WV 25275-0004 304-273-9313
SNYDER DRILLING WELL SERV CO Hwy 1 S PO Box E Grayville IL 62844 618-375-2491
SOAPE DRILLING CO PO Box 1284 Billings MT 59103 406-252-1341
SOJOURNER DRILLING CORP PO Box 3234 Abilene TX 79604 915-672-2832 915-677-6269
SOUTH TEXAS DRILLING CO 2211 NE Loop 410 Ste 100 San Antonio TX 78205 512-654-4085 713-784-4051
SOUTHLAND DRILLING CO Rte 5 Box 121 Victoria TX 77901 512-578-3531
SPARTAN DRILLING INC 11777 Katy Freeway Suite 155 Houston TX 77079 713-558-9005
STAHLCO DRILLING CO 1013 W Eighth PO Box 2231 Amarillo TX 79105 806-376-5038
STERLING DRILLING CO 230 N Fourth St Sterling KS 67579 316-278-2131
STERLING DRILLING CO PO Drawer 3068 Midland TX 79702 915-685-3054
STEWART BROTHERS DRILLING CO PO Box 2067 Grants NM 87020 505-287-2986
STOEPPELWERTH DRILLING INC 1111 E "H" St McCook NE 69001 308-345-1766
STRATA DRILLING INC PO Box 355 Great Bend KS 67530 316-793-7971
SUMPTER & BARKER DRILLING CO PO Box 1081 Stillwater OK 74076 405-372-4063
SUN COUNTRY DRILLING & EXPLORATION INC PO Box 1406 Mineral Wells TX 76067 817-325-9591
SWEETMAN DRILLING INC 500 Heritage Park Place Wichita KS 67202 316-265-5561

T

T E K DRILLING CO 1224 Josey Lane Ste B Carrollton TX 75006 214-242-8314, 6402
TL DRILLING CO 5434 FM 1488 PO Box 1889 Conroe TX 77305 409-273-1480
TMBR DRILLING INC PO Drawer 10970 Midland TX 79702 915-563-1927
TWT EXPLORATION INC PO Box 1329 Park City UT 84060 801-649-8212
TAHOE DRILLING CO 4402 W Industrial Midland TX 79703 915-697-4173
TAYLOR DRILLING CO PO Box 597 Chehalis WA 98532 206-748-3445
TESORO DRILLING CO PO Drawer 2909 Laurel MS 39440 601-425-1481
TEXAS DRILLING CO PO Box 240 Abilene TX 79604 915-673-5024
TEXZONA DRILLING CORP 21 Windmill Circle PO Box 6127 Abilene TX 79608 915-695-4963
THEISS DRILLING CO 1331 Oakhurst Wichita Falls TX 76302 817-766-0763
THOMAS DRILLING CO PO Box 400 Duncan OK 73533 405-252-5580
THOMPSON DRILLING CO 4 Corporate Dr Ste 102 Newport Beach CA 92660-7988 714-644-9292
THUNDERBOLT DRILLING INC PO Box 129 Winnsboro TX 75494 214-342-5221
TIERRA DRILLING CORP PO Box 3469 Midland TX 79702 915-694-9553
TOLTEK DRILLING CO 340 Denver Club Bldg Denver CO 80202 303-571-1331
TOMMY'S OILWELL DRILLING INC PO Box 899 Graham TX 76046 817-549-6960
TOP DRILLING INC 2601 NW Expy Ste 101E Oil Center Oklahoma City OK 73112-7138 405-848-4414

T (Cont'd)

TOWER DRILLING CO 14 Inverness Dr East Bldg H Suite 228 Englewood CO 80112 303-790-2222
TRANSCONTINENTAL DRILLING INC DENVER DIV Anaconda Tower Ste 2700 Denver CO 80220 303-837-9996
TRANSCONTINENTAL DRILLING INC JACKSON DIV 1700 Capital Towers Jackson MS 39201 601-355-1542
TRANSCONTINENTAL DRILLING INC MAGNOLIA DIV Magnolia AR 71753 501-234-5011
TRANSCONTINENTAL DRILLING INC SAN ANGELO DIV 3184 Executive Dr San Angelo TX 76903 915-653-3324
TRI-LAND DRILLING CO PO Box 18605 Oklahoma City OK 73154 405-528-1463
TRI-SERVICE DRILLING CO PO Drawer 70 Midland TX 79702 915-684-6641
TRIAD DRILLING Div UGI Development Co Grand Centre Bldg Ste 310 5400 N Grand Blvd Oklahoma City OK 73112
TRIGG DRILLING CO PO Box 18605 Oklahoma City OK 73154 405-528-4456
TRUE DRILLING CO PO Drawer 2360 Casper WY 82602 307-237-9301
TUCKER DRILLING CO PO Box 1876 San Angelo TX 76901 915-655-6773
TWIN ARROW INC Box 948 Rangely CO 81648 303-675-8226

U

U R C DRILLING CORP 4141 Northwest Expy Oklahoma City OK 73116 405-842-1039
UNDERWATER GAS DEVELOPERS LTD PO Box 428 Port Colborne Ontario L3K 1B7 Canada 416-894-1731
UNDERWOOD OIL WELL SERV INC Ouachita National Bank Bldg Ste 808 Monroe LA 71201 318-388-0385
UNION DRILLING INC PO Drawer 40 Buckhannon WV 26201 304-472-4610
UNIT DRILLING & EXPL CO 1101 Petroleum Club Bldg Tulsa OK 74119 918-582-9595

V

VAUGHN GOOD DRILLING INC PO Box 3744 Enid OK 73702 405-233-3899
VECO DRILLING INC 2457 Industrial Blvd PO Box 1705 Grand Junction CO 81501 303-242-6912
VENTURE DRILLING CO 848 E Main PO Box 1353 Cushing OK 74023 918-225-3269
VERNA CORP PO Box 952 Odessa TX 79760 915-381-6910
VI-ROI DRILLING CO PO Box 1624 Duncan OK 73533 405-255-9750
VIERSEN & COCHRAN DRILLING CO PO Box 19227 Oklahoma City OK 73144 405-681-6611
VISTA DRILLING CO 700 American Tower Shreveport LA 71101 318-227-8342

W

W E K DRILLING CO PO Box 1498 Roswell NM 88201 505-623-5070
W E S CORP PO Box 1329 Park City UT 84060 801-640-8212
W W CORP 220 N Main St Madisonville KY 42431 502-821-0087
EARL F WAKEFIELD INC 300 W Douglas Ste 500 Wichita KS 67202 316-264-2366
WARREN INTERSTATE DRILLING CO 906 Utica Tower Tulsa OK 74104 918-749-8361
WARRIOR DRILLING CO 5801 N Broadway Ste 200 Oklahoma City OK 73118 405-840-1783
WEAL DRILLING CO PO Box 249 Hanson KY 42413-0249 502-322-3302
WES-MOR DRILLING INC PO Box 1269 Graham TX 76046 817-549-3383
WES-TEX DRILLING CO PO Box 3739 Abilene TX 79604 915-677-9121
WESTBURNE DRILLING INC 999-18th St #1860 PO Box 13079 Denver CO 80201 303-623-8800 303-298-8800
WESTERN WELL DRILLING INC 11299 Brighton Rd Henderson CO 80640 303-288-2247
WEST WIND DRILLING CO 1675 Broadway Ste 2260 Denver CO 80202 303-571-0215
WHEATSTATE OILFIFLD SERVICES INC PO Box 329 Pratt KS 67124 316-672-7514
WHELESS DRILLING CO 920 Commercial National Bank Bldg Shreveport LA 71101 318-222-3137
WHITE & ELLIS DRILLING INC 401 E Douglas Ste 500 Wichita KS 67202 316-263-1102
E E WHITEHEAD DRILLING CONTR PO Box 1255 Drumright OK 74030 918-352-2230
WILCOX DRILLERS INC PO Box F F Natchez MS 39120 601-446-5021
WILLBROS DRILLING INC FM 1788-2 mi S I-20 PO Box 833 Rte 6 Midland TX 79701 915-563-0221
WILLIAMS DRILLING CO 1300 Main St Ste 1530 Houston TX 77002 713-652-9106
WILLIAMS DRILLING CO OF SOUTH TEXAS PO Drawer 3050 Alice TX 78333 512-668-9867
WILLIS DRILLING CO PO Box 479 Edinburg TX 78539 512-383-3888
WILSON BROS DRILLING CO 217 E Kaliste Saloom Rd PO Drawer 53628 Lafayette LA 70505 318-233-5950
LES WILSON INC PO Box 331 Carmi IL 62821 618-382-5091
WINTER DRILLING & EXPLORATION CO Rte 1 Box 11-A Nowata OK 74048 918-273-1874
WOOLF & MAGEE INC PO Box 6566 Tyler TX 75711 214-561-4051
WYOMING WELL SERV INC PO Box 340 Cody WY 82414 307-587-4249

Y

YOUNG DRILLING CO Bloomfield Hwy PO Box 717 Farmington NM 87401 505-327-5218

Z

ZENITH DRILLING CORP Fourth Financial Center Ste 505 Wichita KS 67202 316-265-6697

U.S. Contract Rotary Land Drilling Rigs

ALABAMA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
JHJ Drlg	3	d-s	1600	S/B NE12A	2000	250
Penrod Drlg	6	dsl	3425	Nat 1625M6	2200	300
	7	dsl	3425	Nat 1625M6	2200	300
	9	dsl	2600	Nat 1320M	3425	250
	19	dsl	2600	Nat 1320M	3425	250
	106	dsl	1575	Nat 80B	1760	150
BALDWIN						
Exeter Drlg Southern	16	dsl	2600	G-D 1500	2600	250
Underwood Oil Well Serv	12	dsl	350	S/B N3	350	40
CHOCTAW						
Bailey Drlg, Pernie	3	dsl	2000	S/B N12		180
Justiss Oil	11	dsl	1200	C-E GB800	1600	140
SEE Land Drlg	11	dsl	945	C-E SDR	500	90
CLARKE						
Chesley Pruet Drlg	14	dsl	3600	G-D 1500M	3600	250
CONECUH						
JHJ Drlg	1	d-s	1300	S/B NE95A	1700	200
ESCAMBIA						
Bay Drlg	2	dsl	2500	Nat 110M	2500	200
Culver Drlg	20	dsl	2000	Nat 1320	2000	250
Delta Drlg	93	d-s	2000	C-E D3 Type II	2592	160
Dual Drlg	22	dsl	2700	Nat 1320M	2000	280
Exeter Drlg Southern	26	dsl	2500	Nat 95	2500	175
GREENE						
Resource Drlg	10	dsl	2330	Nat 110	2740	180
HALE						
Crescent Drlg	7	dsl	1200	Beth Toro	1200	120
LAMAR						
Apollo Drlg Inc	1	dsl	500	Nat 370	550	105
	5	dsl	500	Nat 370	550	105
Lohmann Drlg	8	dsl	300	Nat 32	550	75
	9	dsl	300	Nat T12	300	35
MOBILE						
Exeter Drlg Southern	27	dsl	2800	G-D 1500	2800	250
Noble Drlg	25	el	3300	Nat 1625DE	3135	300
Raped Drlg	3	d-e	4000	G-D 1500E	2000	250
Resource Drlg	RD-22	dsl	3105	Nat 1320	3740	250
MONROE						
JHJ Drlg	2	dsl	1300	S/B NE95A	1700	200

ALASKA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Alaska United Drlg	WWS-1	d-e	1000	Olwl 700E	700	100
	1	d-e	2000	Olwl 840E	1500	180
	2	d-e	3200	Olwl 2000	2000	200
	3	d-e	3200	Olwl 2000E	2000	200
ANCHORAGE						
Nabors Alaska Drlg	28-E	d-e	2000	C-E Electrohoist IIC	3700	250
Parker Drlg	122	dsl	1800	OIME SL1500	1800	180
Rowan Drlg	33	d-e	1600	Nat 1320UE		200
KENAI						
Rowan Drlg US	29	dsl	1850	Nat 110	2400	200
NORTH SLOPE						
Nabors Alaska Drlg	17	dsl	2000	Olwl 860	2475	190
	1-ES	d-e	500	C-E Electrohoist CII	2400	200
Parker Drlg	95	dsl	2600	Nat 130	3000	180
	96	dsl	2600	Nat 130	3000	200
	97	dsl	1400	Nat 80B	1400	150
	123	dsl	1800	OIME SL1500	1800	180
	128	dsl	1400	OIME TBA2000	1400	150
	141	dsl	2700	OIME E2000	3000	180
	147	dsl	1400	OIME TBA2000	1400	150
	176	d-e	3200	OIME 2000E	2000	200

ALASKA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
NORTH SLOPE (Cont'd)						
Parker Drlg	191	dsl	3200	OIME 3000E	3000	200
Rowan Drlg US	26	dsl	2000	Nat 110	1590	180
	34	d-e	2000	Nat 110EH Special	3000	170
	35	d-e	2000	Nat 110EH Special	3000	170
	41	dsl	3200	Nat 1320UE	3300	250
PRUDHOE BAY						
Nabors Alaska Drlg	25	dsl	2000	Nat 110	2475	200
	18-E	d-e	2000	C-E Electrohoist	3200	250
	22-E	d-e	3200	C-E IIC Electrohoist	3200	250
	26-E	d-e	3200	C-E Electrohoist	4000	250
	27-E	d-e	3200	C-E Electrohoist	4000	250

ARKANSAS

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Excell Drlg	3	dsl	400	Fail 100	400	55
COLUMBIA						
Justiss Oil	9	dsl	800	C-E GC500	1200	125
	21	dsl	800	C-E GB500	1000	120
Noble Drlg	E553	dsl	800	C-E A550	800	120
Nowotny & Conley Drlg	4	dsl	1600	Nat 610	800	130
Sawyer Drlg & Serv	9	dsl	800	S/B N45-M	900	100
SH & J Drlg	1	dsl	807	Crdw O	800	100
	2	g-b	885	S/B N7	750	95
	3	dsl	807	Unit 34	350	73
Transcontinental Drlg-Magnolia	4	gas	700	C-E GB500	700	95
	7	dsl	1020	Olwl 76	1020	125
	54	dsl	800	Nat 50A	980	100
CONWAY						
Unit Drlg & Expl	6	dsl	600	MC U15	800	110
CRAWFORD						
Grace Miller Drlg	103	gas	600	Nat 50	600	100
	121	gas		S-H 7000		80
FRANKLIN						
C E C Drlg	3	dsl	1200	G-D 500	800	120
JOHNSON						
Dual Drlg	6	dsl	600	C-E GB350	560	75
	8	dsl	1250	Wils 75	750	95
Grace Miller Drlg	118	dsl	300	MC U34	350	70
	120	gas		S-H 7000		80
LAFAYETTE						
Rogers Drlg, Mike	1	dsl	550	S-H 7000	650	93
Sawyer Drlg & Serv	15	dsl	800	MC U40D	800	140
Transcontinental Drlg-Magnolia	86					
LOGAN						
Grace Miller Drlg	114	dsl	600	Nat 50	600	100
	119	dsl		BDW 650		120
Unit Drlg & Expl	16	dsl	600	MC U15	800	110
MILLER						
Owen Drlg	7	dsl	1100	Idco H35	504	70
Transcontinental Drlg-Magnolia	94					
POPE						
Alexander Drlg	1	dsl	800	MC U34	500	65
	4	dsl	450	W-N 250H40	425	70
C E C Drlg	1	dsl	1100	MC U15	800	100
	4	dsl	1400	G-D 500	800	120
FWA Drlg	6	dsl	900	Wils 75	720	100
	31	dsl	1000	Wils Mogul 42	750	75
Grace Miller Drlg	101	gas	450	Nat 50	450	70
	104	gas	450	Nat 50	450	80
	116	gas	300	S-H 7000	380	75
New Prospect Drlg	1	dsl	950	S/B N46	950	120
SCOTT						
Henley Drlg	3	dsl	2475	S/B N12A	2475	250
	4	d-e	2600	C-E C2	2000	250

ARKANSAS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
SEBASTIAN						
Astro Drlg	19	dsl	912	Wils Super Giant	912	125
	22	dsl	920	Beth M58	920	120
Grace Miller Drlg	105	gas	300	S-H	145	55
	106	gas	900	Nat 75	900	135
	107	gas	450	MC U15	450	85
	109	dsl	1000	BDW 800		150
	111	dsl	350	S-H 5000	300	60
	115	dsl	600	S-H	600	85
	123	dsl		BDW 800		150
Ladrido Drlg	2	dsl	1000	MC U15	1050	120
	3	dsl	1350	MC U15	1050	120
UNION						
Hatcher & Son, H F	3	dsl	425	Wils Mogul 42	350	50
Sawyer Drlg & Serv	2	dsl	400	S/B N4	400	85
Shuler Drlg	1	dsl	325	S/B N4	350	50
	4	dsl	700	C-E GB350	700	85
	6	dsl	950	Wils SG	950	105
	7	dsl	360	S-H 6000	570	60
	8	dsl	475	S-H 7000	540	70
	9	dsl	475	S-H 7000	750	70

CALIFORNIA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Cal Pacific Drlg	1	d-e	1200	Sup 700UE	700	100
	2	d-e	1200	Sup 700UE	700	100
	4	d-e	1950	Sup 1000UE	1000	125
	5	d-e	1950	Sup 1000UE	1000	125
	6	d-e	1950	Sup 1000UE	1000	125
	8	d-e	2000	C-E C1Type2	1500	160
Dahlquist Drlg	1	dsl	300	Tomson 3000	250	25
	5	dsl	300	Fail 2000	160	16
Edwards Well Serv	D30	dsl		Idco	300	
Gary Drlg	D-10	dsl	628	Hoop	400	55
Golden State Drlg	D-6	dsl	750	Custom HT	450	55
	D-8	dsl	750	Chai 78	450	55
Hunnicutt Camp Drlg	4	dsl	1400	Olwl 66	640	110
	5	dsl	960	Idco 525	480	90
Kenai Drlg West Coast	6	dsl	850	C-E J750	800	100
	7	dsl	800	MAC 400	425	70
	8	dsl	825	W-M T5054	425	70
	9	dsl	850	Idco H40D	400	65
COLUSA						
Hunnicutt Camp Drlg	2	dsl	1520	Olwl 660	880	125
	6	d-e	4000	Nat 110	2000	180
Monterey Drlg	B	d-e	1000	Nat 80B	2000	140
Scandinavian Montgomery Drlg	11	dsl	1500	C-E GB800	1500	120
CONTRA COSTA						
Cleveland Drlg	14	dsl	1200	Olwl 500	800	120
Monterey Drlg	F	d-s	500	Idco H30E	500	80
FRESNO						
Coastal Drlg	2	dsl	900	Olwl 527	550	75
Gary Drlg	D-8	dsl	450	C-E GB160T	400	45
Montgomery Drlg	19					
IMPERIAL						
Cleveland Drlg	6	d-e	2400	Nat 110UE	1500	200
Montgomery Drlg	4	dsl	2000	Olwl 96	1500	180
KERN						
Atlantic Oil	4	dsl	900	Nat 55	900	100
	5	dsl	680	Nat 50A	680	90
	11	dsl	1350	Nat 80	1350	140
	16	dsl	1650	Nat 130	2475	200
Barnes Core Drlg	711	dsl	750	HT 5500	450	55
Bawden Drlg, Peter (CA)	18	d-e	2300	Nat 110M	1500	160
Brinkerhoff-Signal	8	g-b	1000	G-D 800	1000	140
California Prod Serv	M-17	dsl	300	Crdw K200C	308	40
	M-70	dsl	446	Idco H35CKD	424	40
	M-71					
Cardinal Drlg	27	dsl	1200	C-E GC500	1200	125
	29	dsl	800	C-E GA500	1200	100
Cleveland Drlg	2	dsl	600	S/B RR400	450	50
	3	d-e	2000	Nat 100	1500	180
	4	dsl	1200	Nat 75CA	800	120
	7	dsl	1000	Nat 75	800	120
	8	dsl	800	Idco 750	700	100
Coastal Drlg	7	dsl	2000	C-E J750	825	115

CALIFORNIA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
KERN (Cont'd)						
Gary Drlg	D-11	dsl	600	C-E C50	600	80
	D-12	dsl	382	C-E GB160T	300	45
	D-13	dsl	450	C-E GB16T	300	40
	D-2	dsl	800	Nat T45	600	90
	D-3	dsl	628	C-E G350	600	80
	D-30	dsl	300	Idco 35		
	D-4	dsl	475	C-E GB160T	450	45
	D-5	dsl	382	Hoop GT34	300	25
	D-6	dsl	800	C-E GB160T	400	45
	D-9	dsl	628	Cbot	400	55
	1	dsl	450	Hoop	400	50
	14	dsl	800	Gary	640	90
	15	dsl	800	Gary	640	90
Golden State Drlg	D-10	dsl	750	Custom HT	450	55
Hylton Drlg	1	dsl	400	Nat T12	300	40
	4	dsl	380	HT MR10	150	30
	5	dsl	380	Idco H30	300	50
	7	dsl	300	Nat T12	380	40
	8	dsl	380	Idco H30	300	50
	9	dsl	400	Idco H30	300	50
K B Drlg & Prod	7			Coop		
Kellogg & Sons, K L	41	d-e	1000	Nat Con 75CA	700	110
Kenai Drlg West Coast	29	dsl	900	Wils Giant	1200	120
Loffland Bros	64	d-e	1290	MC U36EA	1200	100
	92	d-e	2160	MC U914CE	2200	180
	98	d-e	2000	MC U40E	1600	130
	125	d-e	2180	MC U914	2200	180
	185	gas	1600	MC U914C	1900	180
	328	dsl	2160	Nat 130	2400	220
Marlin West	Marlin 11	d-s	2000	Nat 110	1600	180
	Marlin 12	d-s	2000	Nat 110	1600	180
	13	d-s	2000	Nat 110UE	1600	180
Montgomery Drlg	3					
	6	dsl	1400	C-E GB800	1200	130
	8					
	9					
	12	dsl	2000	C-E GB800	750	120
	14	dsl	1200	Olwl 66	700	105
	15	d-e	2000	Nat 75CB	1000	140
	16					
	18					
NECK Drlg	1	gas	350	Wils Super	350	40
Pyramid Oil	3	dsl	400	Idco H30	300	30
Republic Drlg	21	dsl	2100	Nat 55	1200	120
Scandinavian Montgomery Drlg	3	dsl	1200	Nat 75	700	120
	8	dsl	1200	Nat 75	700	120
KINGS						
Montgomery Drlg	10					
Scandinavian Montgomery Drlg	9	d-e	2200	Nat 1320UE	3000	220
LAKE						
Brinkerhoff-Signal	81	d-e	2100	Olwl 760E	2100	160
Loffland Bros	25	d-e	2160	MC U914CE	2200	180
	50	d-e	1420	MC U712A	1600	170
Montgomery Drlg	17	d-e	2000	Olwl 940E	2000	200
LOS ANGELES						
Atlantic Oil	3	dsl	690	Idco H40	370	75
Bawden Drlg, Peter (CA)	22	d-e	700	C-E M58	800	100
	38	d-e	1800	Olwl 940E	1500	160
Big Chief Drlg	18	dsl	500	Hoop GXXTA	450	60
Brinkerhoff-Signal	90	dsl	4000	G-D 1500E	2000	250
California Prod Serv	D-3	dsl	300	Idco H37D	461	45
	D-4	dsl	500	Hoop MTA	461	45
Cleveland Drlg	1	dsl	1200	Olwl 96	1200	180
Gary Drlg	D-14	dsl				
	D-7	dsl	381	Gary	200	20
Kellogg & Sons, K L	40	d-e	1000	Nat 610	700	110
Kenai Drlg West Coast	24	d-e	1500	Wils Titan	1000	130
	30	dsl	975	Idco H40D	400	65
Monterey Drlg	C	d-e	1000	Nat 100ME	1500	160
Montgomery Drlg	1	d-e	3200	Nat 1320UE	3645	250
Republic Drlg	11	dsl	636	Idco H30	318	35
	16	dsl	636	Idco H35	318	40
	[illegible]2	dsl	1900	MC U36A	950	100
Thompson Drlg	2	dsl	900	C-E GA250T	450	100
MONO						
Republic Drlg	6	dsl	636	Idco H40	475	55
MONTEREY						
Melton Drlg	3	dsl	500	C-E 160	350	40
ORANGE						
Atlantic Oil	2	dsl	[illegible]	Nat 55	1260	110
	8	dsl	[illegible]	[illegible] T32	370	75
California Prod Serv	D-7	dsl	[illegible]	Hoop MTA	654	65
	M-72	dsl	500	Idco H35CKD	[illegible]	40
	M-73	dsl	370	Idco H35CKD	424	40
Republic Drlg	17	dsl	1100	Cbot 1287	636	70
SACRAMENTO						
Hunnicutt Camp Drlg	3	dsl	1400	Nat CA50	640	105
Owens Serv, Jack	2	dsl	200	Idco H38	350	40
SAN LUIS OBISPO						
NECK Drlg	2					
SANTA BARBARA						
Atlantic Oil	10	dsl	1020	Nat T32	370	75
Bawden Drlg, Peter (CA)	27	d-e	1500	C-E A550E	1000	120
	50	d-m	1500	Nat 55	700	110
Kenai Drlg West Coast	4	dsl	978	Idco H40D	400	70
	5	dsl	1000	Nat T32	400	75
	34	dsl	975	C-E GB350	800	90
SOLANO						
Atlantic Oil	15	dsl	1020	Nat T32	340	75
Cleveland Drlg	5	dsl	2400	Idco Super 711E	1600	180
Hunnicutt Camp Drlg	1	dsl	950	Nat T32	320	90
Loffland Bros	232	dsl	1000	MC U15	1000	120
Monterey Drlg	A	d-e	1000	Idco 1040E	2000	180
Montgomery Drlg	7	dsl	1200	Nat 75	700	110
	43	e-s	2000	Nat 110UE	2000	200
Owens Serv, Jack	4	dsl	300	Idco H35	318	40
	5	dsl	300	Idco H25	300	40
	8	dsl	1800	RMI 750	870	100
SONOMA						
Brinkerhoff-Signal	83	d-e	2000	C-E D3	2000	160
	87	dsl	2000	Nat 80UE	2000	260
Coastal Drlg	1	dsl	550	Crdw KM250	250	55
Loffland Bros	27	d-e	2160	MC U20	2200	170
	105	d-e	2160	MC U914EC	2200	180
	306	gas	1150	S/B N95	1300	170
SUTTER						
Cleveland Drlg	11	dsl	1000	Coop D50	400	75
	12	dsl	1500	Olw. 66	700	120
Owens Serv, Jack	6	dsl	300	Idco H35	300	40
VENTURA						
Bawden Drlg, Peter (CA)	10	d-e	2300	Olwl 940E	1500	180
	11	d-e	1600	C-E A800WE	1000	140
	24	d-e	1550	Nat 80E	1000	140
Cal Pacific Drlg	3	d-e	1200	Sup 700UE	700	100
	7	d-e	950	Sup 700UE	700	75
Gary Drlg	D-16	dsl				
Loffland Bros	16	dsl	1900	MC U914C	2000	180
	212	gas	2000	MC U914A	1600	180
	217	gas	1600	MC U914C	1900	180
Monterey Drlg	D	d-s	700	S/B N75	700	100
Montgomery Drlg	2	d-e	2000	Olwl 940E	3000	180
Republic Drlg	20	dsl	2400	S/B N95	1800	160
YOLO						
Atlantic Oil	6	dsl	810	Nat 80	1680	140
	7	dsl	1020	Nat T32	450	75
	12	dsl	850	Nat 50A	680	90
	14	dsl	1020	Idco H		65
Bawden Drlg, Peter (CA)	23	d-e	1700	C-E A800WE	1000	140
Owens Serv, Jack	7	dsl	1100	Coop 350	450	75

COLORADO

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Bow Island Drlg	37	dsl	278	W-N 2000	175	30
	38	dsl	278	W-N 2000	175	30
Excell Drlg	4	dsl	230	Ewb M75	230	20
Tierra Drlg	16	dsl	650	S/B 4610	750	75
ADAMS						
Allison Bros Drlg	1	dsl	320	Idco BIR800	920	100
	2	dsl	360	Crdw KB500	380	75
Exeter Drlg Northern	6	dsl	330	Nat T20	300	60
Western Well Drlg	3	dsl	350	Fail	350	40
ARAPAHOE						
Gibson Well Serv, J W	98	dsl	700	Sup	700	100
BACA						
Cheyenne Drlg	1	dsl	450	Olwl 52T	525	65
H30 Drlg	8	dsl	600	Idco H40	600	100
Wakefield, Earl F	7	dsl	640	C-E GB160T	640	50
BOULDER						
Tower Drlg	2	dsl	1000	Troy 600	600	100
CHEYENNE						
Murfin Drlg	19	dsl	525	Wils Super Mogul 42	525	65
	23	dsl	375	Idco H35S	475	65
Service Drlg (TX)	10	dsl	300	MC	400	50
DOLORES						
Nicor Drlg	36	dsl	1150	G-D 500	650	110
GARFIELD						
Manning, R L	19	dsl	925	Beth M58	980	100
Nicor Drlg	38	dsl	750	Wils 75	640	90
HUERFANO						
Nicor Drlg	44	d-e	1500	G-D 500E	650	110
JACKSON						
Atco Drlg	20	dsl	800	C-E GB500	800	100
KIOWA						
Murfin Drlg	25	dsl	600	Nat 370	600	75
KIT CARSON						
Murfin Drlg	22	dsl	600	Nat 370	600	75
LA PLATA						
Arapahoe Drlg	4	g-b	700	Nat 50A	500	120
Aztec Well Serv	124	dsl	600	Wils 75	1100	100
Four Corners Drlg	4	dsl	1500	Crdw KB500	700	80
LINCOLN						
Eagle Drlg	2	dsl	1000	Nat T45	725	95
Murfin Drlg	14	dsl	400	Nat T45	700	85
	26	dsl	475	S/B N42	580	100
	27	dsl	475	S/B N46	580	100
MESA						
Loffland Bros	12	dsl	840	Idco Hydrair H44CSC	868	100
Nicor Drlg	39	dsl	820	Nat D300	260	55
Veco Drlg	1	dsl	400	Fail 90	400	50
	2	dsl	425	May 5000	500	70
	5	dsl	1400	OIME 750	950	110
	6	dsl	1400	OIME 750	950	110
MOFFAT						
Manning, R L	20	dsl	1050	C-E J1000	1290	140
MONTEZUMA						
Coleman Drlg	1	dsl	900	Idco H44	636	80
Dual Drlg	34	d-e	2000	C-E D3	1000	160
Loffland Bros	26	d-e	2000	MC U36	1600	110
	29	d-e	1400	MC U36A	1600	110
MONTROSE						
Loffland Bros	5	dsl	1220	Idco H1000	868	120
MORGAN						
Allison Drlg	15	dsl	720	S/B N7	720	100
	25	gas	435	G-D 500	435	100
Exeter Drlg Northern	13	dsl	350	S/B N4	300	60
Toltek Drlg	2	dsl	680	Nat 50A	875	105
PROWERS						
Murfin Drlg	12	dsl	400	Beth C50	600	80
RIO BLANCO						
All Western Drlg	3	dsl	1050	MC U15	840	100
	4	dsl	1500	Sup 700	750	100
Anderson-Myers Drlg	7	dsl	1200	Nat 55	1400	130
Cardinal Drlg	2	dsl	864	C-E GA500	760	100
	4	dsl	560	C-E GB350T	760	85
Kenai Drlg West Coast	3	dsl	600	Olwl 52T	700	95
Manning, R L	11	dsl	720	Nat 370	720	85
Nicor Drlg	37	dsl	965	Fail LC90	340	50
Parker Drlg	56	dsl	1000	OIME SD5	1000	125
Twin Arrow	309	dsl		S/B	575	60
Veco Drlg	3	dsl	850	MC U36A	700	90
	8	dsl	[illegible]00	S/B 45	750	100
ROUTT						
Atco Drlg	5	dsl	326	Nat T32	326	75
	18	dsl	326	Nat T32	326	75
Brinkerhoff-Signal	79	dsl	550	Nat 370	800	85
Nicor Drlg	43	d-e	1500	G-D 500E	650	110
WASHINGTON						
Allison Drlg	3	dsl	360	Crdw KB500	380	75
Toltek Drlg	4	dsl	440	MC U3[illegible]	440	75
WELD						
Allison Bros Drlg	7	dsl	475	Idco BIR800	950	100
Exeter Drlg Northern	1	dsl	500	Nat 50A	750	95
	2	dsl	375	C-E GA250	480	75

COLORADO (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
WELD (Cont'd)						
Exeter Drig Northern	4	dsl	375	Nat T32	480	78
	5	dsl	300	MC U34D	300	60
	12	dsl	500	Nat T45	750	95
	14	dsl	375	Beth C50	600	78
	22	dsl	500	MC U15	750	95
	23	dsl	500	MC U15	750	87
	25	dsl	375	MC U15	500	85
	33	dsl	500	MC U15	750	85
	40	dsl	500	MC U15	750	95
Gibson Well Serv, J W	75	dsl	450	Crdw K8500	450	80
Rio Grande Drig	26	dsl	750	S/B N75	1030	145
Toltek Drig	3	dsl	680	S/B N4A	440	85
Tower Drig	1	dsl	550	Mac 400	400	85
	3	dsl	600	S/B N45	500	90
True Drig	19	dsl	1000	Nat 50A	1000	120
	26	dsl	900	Idco H725SC	900	100
	27	dsl	900	Idco H725SC	900	100
YUMA						
Excell Drig	2	dsl	375	671 GMC	210	33
Western Well Drig	1	dsl	350	Midway 2000	350	25

FLORIDA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Penrod Drig	15	dsl	3000	G-D 2100	2200	300
	108	dsl	1000	Nat 80B	1760	150
ESCAMBIA						
Tesoro Drig	2	dsl	2600	Nat 1320M	2742	200
LEE						
SEE Land Drig	14	dsl	1500	RMI	1000	150
OKALOOSA						
Murco Drig	18	dsl	2800	MC U1220	2400	250
SANTA ROSA						
Delta Drig	66	d-e	2600	C-E Electrohoist II	3456	180
Murco Drig	14	d-s	3200	G-D 1500	2800	250

GEORGIA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
CAMDEN						
Noble Drig	E1102	dsl	1870	C-E A1100	1870	180

IDAHO

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
BEAR LAKE						
Atco Drig	9	d-e	2500	Nat 110UE	2500	200
Parker Drig	169	dsl	1650	OIME SL1000P	1650	200
BONNEVILLE						
Rio Grande Drig	5	dsl	1300	Nat 110	2400	200
CARIBOU						
Loffland Bros	57	d-e	1800	Nat 80B	2000	160

ILLINOIS

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
BROWN						
Ram Drig	2	dsl	1800	Nat T12	1800	50
	3	dsl	360	Nat T12	360	40
CLAY						
Precision Expl	4	dsl	400	Nat T20	400	55
Wilson Inc, Les	15	dsl	500	Idco H35	400	50
EDWARDS						
Beard Drig (IL)	1	dsl	400	Nat T12	350	45
Davis Drig, D L	1	dsl	300	Wils Mogul 38	300	35
Precision Expl	3	dsl	400	Nat T16	400	55
Smith Drig	3	dsl	375	S/B N4	500	60
FAYETTE						
Smith Drig	7	dsl	450	G-D 2500	350	35
	8	dsl	350	Chal M280	360	45
	12	dsl	450	Chal M320	400	50
GALLATIN						
Gallagher Drig	4	dsl	500	Beth S45E	476	60
JASPER						
Mitchell Drig, Geo N	4	dsl	400	S/B N4	400	60
Precision Expl	1	dsl	400	Nat T20	400	55

ILLINOIS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
JEFFERSON						
Mitchell Drig, Geo N	5	dsl	400	S/B N4	400	60
LAWRENCE						
Smith Drig	6	dsl	800	S/B N45M	750	100
MARION						
Smith Drig	11	dsl	450	Nat T20	480	60
RICHLAND						
Precision Expl	2	dsl	400	Nat T20	400	55
SALINE						
Mitchell Drig, Geo N	7	dsl	400	Idco H35	400	65
Ram Drig	1	dsl	1800	Idco HD35	1800	60
WABASH						
Smith Drig	2	dsl	350	Nat T8	238	25
WASHINGTON						
Oelze, Elmer Jr	1	dsl	475	Lee 650	475	85
	2	dsl	475	W-N 25040	380	60
	3	dsl		W-N S34A	160	50
	4	gas		Crdw HL	140	40
WAYNE						
Barr Drig	1	dsl	378	Nat T12	300	50
Mitchell Drig, Geo N	6	dsl	400	Wils Super 38	400	60
Precision Expl	5	dsl	400	Nat T12	385	45
Smith Drig	9	dsl	320	Nat T12	320	40
WHITE						
Harris Drig	1	dsl	500	Nat T12	360	40
	4	dsl	500	Nat 50	360	60
Mitchell Drig, Geo N	1	dsl	400	Beth SN45	400	60
Ram Drig	4					
Royco Drig	1	dsl	300	Crdw	335	55
Snyder Drig Well Serv	1	dsl	400	S/B 55	400	65
	2	dsl	400	Beth 545	400	60
Wilson Inc, Les	11	dsl	300	Idco H35	450	50
	12	dsl	500	Idco H35	400	50
	17	dsl	500	Idco H37	560	60

INDIANA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Big Seven Drig	7	dsl	450	C-E GB250	400	60
POSEY						
Kendall Drig	2	dsl	450	S/B N4	360	55
Lohmann Inc, J Roy	6	dsl	600	Nat 50	600	65
Mitchell Drig, Geo N	9	dsl	600	G-D 500M	600	100
Smith Drig	4	dsl	400	C-E GA150	350	50
SPENCER						
J-V Drig	6	dsl	145	Speedstar SS15S	145	16/ 3.5"
VANDERBURGH						
J-V Drig	9	gas	85	Cbot F	85	600/ 2.88"
WARRICK						
Gwaltney Drig	1	dsl	300	Nat T12	225	30

KANSAS

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Carter Land & Cattle	1	dsl	250	G-D 1000	350	10
	2	dsl	250	G-D 1000	350	10
Rine Drig	6	gas	700	S/B N75	750	120
	9	dsl	1000	G-D 800	1000	135
BARBER						
Dunne-Gardner Petr	2	dsl	400	Idco H35	450	70
Graves Drig	1	dsl	300	S/B N4	400	60
H30 Drig	77	dsl	525	Idco H40	600	80
Sweetman Drig	1	dsl	750	Nat 370	750	90
BARTON						
Abercrombie Drig	11	dsl	600	C-E 350	700	75
Allen Drig	1	dsl	400	Nat T32	425	60
	3	dsl	525	Idco H30	425	50
Big Springs Drig	3	dsl	450	S/B N4	450	50

KANSAS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
BARTON (Cont'd)						
Damac Drig	7	dsl	385	S/B N4	385	60
Duke Drig	3	dsl				
Husky Drig	2	dsl	350	Idco H35	650	80
H30 Drig	7	dsl	280	MC Mac400	312	80
L D Drig	1	dsl	410	Beth S45A	300	45
Lauck Oil, D R	2	dsl	350	S/B N45	400	60
Peters Drig	4	dsl	250	Crdw RL	250	60
	8	dsl	250	Crdw DB200	250	60
Red Tiger Drig	4	dsl	700	Idco H35	700	55
Rockhold Engr	7	gas		W-N	200	
Wheatstate Oilfield	3	dsl	340	C-E 250	425	50
	4	dsl	525	C-E GB160	525	40
BUTLER						
Brandt Drig	3	dsl	350	W-N R4	330	35
Edco Drig	3	dsl	125	Crdw J101	235	750
Range Drig	1	dsl	360	Cbot SAL4500	440	35
White & Ellis Drig	3	dsl	345	Nat T12	345	45
	4	dsl	300	C-E GA250	300	50
	5	dsl	300	C-E GA150	475	40
CLARK						
Sage Drig	7	dsl	400	BDW 450	400	90
White & Ellis Drig	9	dsl	410	S/B N46	750	105
COMANCHE						
Aldebaran Drig	2	dsl	525	Nat T32	500	72
COWLEY						
Edco Drig	6	dsl	375	Crdw KB150	435	35
McAllister Drig	9	dsl	300	Idco H30	300	55
Range Drig	2	dsl	350	Wils Giant	350	55
	3	dsl	350	MC U10A	350	55
White & Ellis Drig	7	dsl	300	MC U34	475	40
DECATUR						
Big Springs Drig	1	dsl	360	Beth S4513	360	50
EDWARDS						
Lauck Oil, D R	1	dsl	350	MC U15	400	60
Rains & Williamson Oil	2	dsl	450	Olwl 52-T	450	67
Sterling Drig (KS)	2	dsl	350	MC RV34B	285	48
	4	dsl	450	MC U15	285	50
White & Ellis Drig	2	dsl	425	C-E GA250	475	45
ELK						
Edco Drig	1	dsl	375	Sullivan 300A	318	30
ELLIS						
Abercrombie Drig	6	dsl	365	Beth S50	365	55
Buffalo Drig Co	7	dsl	360	S/B N4	460	55
Buffalo Drig Inc	1	dsl	500	S/B N4	400	60
Jay-Lan Corp	3	dsl	3406	Wils 42	825	50/ 5"
KANDRILCO Inc	1	dsl	375	C-E GA250T	475	55
Rains & Williamson Oil	7					
Red Tiger Drig	9	dsl	700	MC U10	700	60
	10	dsl	700	TSM 6000	700	70
ELLSWORTH						
Duke Drig	1	dsl	375	MC	375	50
White & Ellis Drig	10	dsl	410	Beth S45E	410	50
FORD						
Eagle Drig	1	dsl	600	Nat 370	650	70
Freeman Drig	1	dsl	525	Idco H40	600	85
Leben Drig	7	dsl	500	G-D 3000	500	70
GOVE						
Beredco	3	dsl	500	MC U15	800	75
Bergman Drig	1	dsl	350	C-E	350	55
DNB Drig	2	dsl	500	Nat T32	525	65
Rains & Williamson Oil	11	dsl	300	S/B	500	45
Slawson Drig	5	dsl	360	Idco H525	480	75
GRAHAM						
Abercrombie Drig	7	dsl	365	MC J34	365	50
Farmer, John O	4	dsl	400	Idco H30	400	50
H30 Drig	11	dsl	280	Idco H30	312	55
Murfin Drig	8	dsl	100	Mac 400	400	60
GREELEY						
Gibson Well Serv, J W	93	dsl	450	Cbot M1287	450	60
GREENWOOD						
Edco Drig	2	dsl	375	Sullivan 300	375	30
HARPER						
Gabbert-Jones	6	dsl	450	Nat T32	310	60
H30 Drig	3	dsl	280	Idco H40	312	60
Rains & Williamson Oil	3	dsl	525	Crdw J350	525	67

KANSAS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
HASKELL						
Damac Drlg	8	dsl	310	Idco H35S	450	75
HODGEMAN						
H30 Drlg	12	dsl	300	Crdw V450	525	65
Pickrell Drlg	10	dsl	370	MC U15	370	55
White & Ellis Drlg	8	dsl	410	C-E 350	750	75
JEFFERSON						
Hamm Drlg	1	dsl	400	W-N Apache	425	60
KEARNY						
Cheyenne Drlg	4	dsl	600	Nat 370	600	85
Sage Drlg	2	dsl	400	Olwl T52	400	67
KINGMAN						
Aldebaran Drlg	3	dsl	525	Idco	600	72
KANDRILCO Inc	2	dsl	375	MAC 400	475	55
KIOWA						
Abercrombie Drlg	6	dsl	385	Idco H35	365	60
Beredco	2	dsl	525	Nat 370	575	70
Gabbert-Jones	8	dsl	450	Nat T32	450	60
	9	dsl	310	Nat T32	450	60
Pickrell Drlg	1	dsl	450	MC U15	450	65
LANE						
Abercrombie Drlg	1	dsl	385	MC U34	385	50
LOGAN						
Abercrombie Drlg	5	dsl	750	Idco 725	600	100
Aldebaran Drlg	1	dsl	525	S/B N42	600	72
McPHERSON						
Kansas Drlg & Well Serv	5	dsl	750	Crdw KB200C	400	60
MARION						
Berentz Drlg	3	dsl	440	Nat T12	500	38/2.88
	4	dsl				
Kansas Drlg & Well Serv	1	dsl	365	Cbot 1068	300	40
MEADE						
Aldebaran Drlg	4	dsl	550	S/B N42	500	72
Rains & Williamson Oil	5	dsl	400	Idco H40	525	70
MORRIS						
Kansas Drlg & Well Serv	4	dsl	750	KREMCO K600	500	70
MORTON						
Wakefield, Earl F	1	dsl	440	MC U34	440	50
NEMAHA						
Astro Drlg	20	dsl	550	Cbot 550	456	85
Brandt Drlg	1	dsl	350	Beth S50	450	50
Edco Drlg	5	dsl	475	Crdw KB200	375	45
NESS						
Galloway Drlg	1	dsl	300	Nat T32	300	50
OSBORNE						
Rains & Williamson Oil	9	dsl	300	Beth	300	45
Red Tiger Drlg	8	dsl	700	C-E GA250T	700	55
PAWNEE						
H30 Drlg	2	dsl	280	MAC 400	312	80
PHILLIPS						
Red Tiger Drlg	7	dsl	700	C-E GA250T	700	55
POTTAWATOMIE						
McAllister Drlg	10	dsl	300	S/B N4	300	6000
PRATT						
Brandt Drlg	2	dsl	350	Nat 370	600	75
Damac Drlg	1	dsl	310	Wils Giant	310	60
FWA Drlg	32	dsl	600	Wils Mogul 42	375	60
Red Tiger Drlg	6	dsl	700	Idco H35	700	60
Slawson Drlg	2	dsl	360	Idco H35	360	55
Wheatstate Oilfield	1	dsl	340	Idco H35	525	60
	2	dsl	450	Mini-Max 15	450	65
RAWLINS						
Abercrombie Drlg	9	dsl	365	Beth Breeze	365	55
Murfin Drlg	2	dsl	400	Nat T32	400	60
	3	dsl	400	Nat T25	400	60
Stoeppelwerth Drlg	3	dsl	500	Nat 370	500	65
RENO						
Blackstone Drlg	3	dsl	300	BDW 450T	300	50
Heartland Drlg	1	dsl	500	Idco H35S	650	65
H30 Drlg	5	dsl	312	Idco H35	510	65
Red Tiger Drlg	1	dsl	700	MC U15	700	60
RICE						
Allen Drlg	4	dsl	360	Nat T20	425	45
Blackstone Drlg	4	dsl		BDW	450T	40
Red Tiger Drlg	3	dsl	700	Idco H35	700	55
Sterling Drlg (KS)	5	dsl	350	C-E GB350	600	70
	8	dsl	350	G-D 2000	250	28
ROOKS						
Abercrombie Drlg	4	dsl	365	Idco H35	365	85
Allen Drlg	5	dsl	525	Nat 370	600	70
Duke Drlg	2	dsl	250	Nat	250	50
Red Tiger Drlg	2	dsl	700	C-E GA250	700	55
Rockhold Engr	3	gas		Crdw RL	150	
RUSSELL						
Red Tiger Drlg	5	dsl	700	Unit U15	700	60
Shields Drlg	2	dsl	300	Beth C50	300	55
Slawson Drlg	1	dsl	360	Idco H35	360	55
SCOTT						
Slawson Drlg	3	dsl	480	Idco H35	480	70
SEDGWICK						
R R A Inc	1	dsl	335	Coop 350	325	65
SEWARD						
Gabbert-Jones	12	dsl	450	S/B N42	525	80
Moran Drlg, E W	24	dsl	920	S-H 7000	450	95
Sage Drlg	5	dsl	400	Nat T32	400	67
Zenith Drlg	2	dsl	600	C-E GB350	600	85
	4	dsl	1100	MC U15	1100	120
	6	dsl	600	C-E GB350	600	85
SHERIDAN						
Dunne-Gardner Petr	1	dsl	350	C-E 250	450	50
Murfin Drlg	15	dsl	400	Idco H35	475	65
Rains & Williamson Oil	1	dsl	525	Beth S45-B	450	55
SHERMAN						
Western Well Drlg	2	dsl	350	Fell H2000	350	35
STAFFORD						
Allen Drlg	2	dsl	350	Idco H25	425	45
J W Drlg	1	dsl	380	MC U15	380	60
Sterling Drlg (KS)	1	dsl	350	MC U34	285	46
STANTON						
Sage Drlg	6	dsl	400	C-E 350	400	85
Zenith Drlg	7	dsl	550	S/B N4	500	70
STEVENS						
Bohannan Drlg, J B	1	dsl	950	Idco 725	750	100
	2	dsl	950	Idco H35SC	550	85
Lanex Drlg	C-8	d-s	1600	BDW 650	650	120
Tierra Drlg	17	d-e	800	BDW 650	650	120
SUMNER						
Aldebaran Drlg	L-1	dsl	500	Idco H35	500	72
Slawson Drlg	4	dsl	6500	Idco H35	360	60
THOMAS						
Murfin Drlg	16	dsl	400	C-E S45E Beth	400	60
	21	dsl	375	Idco H35	475	65
TREGO						
Abercrombie Drlg	10	dsl	365	Cbot Tri Mtd	220	45
	12	dsl	365	Beth Freeze	300	55
Big Springs Drlg	2	dsl	360	Nat T32	360	55
DNB Drlg	3	dsl	450	Nat T20	350	50
Rains & Williamson Oil	4	dsl	400	S/B N4	450	55
WABAUNSEE						
Edco Drlg	4	dsl	125	Davey	235	750
WICHITA						
Sage Drlg	1	dsl	400	Nat T32	400	65

KENTUCKY

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Big Seven Drlg	11	dsl	360	C-E GB160	335	40
DAVIESS						
Kendall Drlg	3	dsl	450	S/B N4	300	55
HENDERSON						
Crescent Drlg	4	dsl	400	Beth S45	400	40
Gallagher Drlg	7	dsl	350	Nat T20	475	50
Lohmann Inc, J Roy	21	dsl		Nat T12		40

KENTUCKY (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
HOPKINS						
Crescent Drlg	8	dsl	400	Beth S45	400	50
W W Corp	1	dsl	450	G-D 3000	450	50
Weal Drlg	1	dsl	325	Nat T12	360	40
	2	dsl	335	Crdw S	335	40
McLEAN						
Kendall Drlg	1	dsl	450	Nat T12	300	400
OHIO						
J-V Drlg	8	dsl	145	Speedstar SS15S	145	16/3.5"
UNION						
Gallagher Drlg	5	dsl	300	Nat T12	310	35
Mitchell Drlg, Geo N	8	dsl	400	MAC 300	300	42
WEBSTER						
Royco Drlg	2	dsl	300	G-D 3000	200	50

LOUISIANA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
CRC Mallard Well	12	dsl	800	Wils 90	800	110
Diamond M Land Drlg	174	dsl	2800	Nat 110M	2550	160
Harris Well Serv	17	dsl	316	Idco H35	316	75
	18	dsl	316	Idco H35	316	75
	19	dsl	316	Idco H35	316	75
	21	dsl	316	Idco H35	316	75
	22	dsl	316	Idco H35	316	75
	23	dsl	316	Idco H37	480	80
	24	dsl	316	Idco H35	316	75
	25	dsl	632	Idco H44	632	100
	27	dsl	316	Idco H35	316	75
	28	dsl	316	Idco H35	316	75
	29	dsl	316	Idco H35	316	75
	31	dsl	316	Coop LTD350	316	75
	32	dsl	316	Idco H35	316	75
	33	dsl	900	Idco H44	900	100
Harris Well Service	34	dsl	600	Cbot 750	900	80
	35	dsl	600	Wils 75	900	100
NL Well Serv	277	dsl				
Penrod Drlg	1	dsl	3425	Nat 1625M6	2200	300
	2	dsl	2600	C-E C2	3425	250
	4	dsl	3425	C-E C3	2200	300
	5	d-e	3425	C-E C3	3200	300
	11	dsl	2600	Nat 1320M	3425	250
	14	dsl	3075	S/B N12A	1840	200
	17	dsl	2600	Nat 1320M	3425	250
	27	dsl	2600	C-E C2	2000	250
	28	dsl	3425	Nat 1320M	2200	250
	29	dsl	3425	Nat 1320M	2200	250
	110	dsl	1600	Nat 1625M	2200	300
	122	dsl	1300	Nat 1625M	2000	250
Willbros Drlg	10	d-s	3000	Idco E1700	3000	250
Williams Drlg	1	d-e	3200	G-D 1500	2000	250
	2	d-e	3200	G-D 1500	2000	250
ACADIA						
American Well Serv & Drlg	15	dsl	1700	S/B DH14610	900	120
Bailey Drlg, Pernie	1	dsl	1500	S/B N75	850	120
	23	dsl	1600	OIME SL7	1400	150
Butler-Johnson	3	g-b	1200	C-E A550	1200	135
Delta Drlg	96	d-e	2800	C-E C1 Type II	3456	200
Grey Wolf Drlg	9	d-e	3000	C-E CZ11	2000	250
	10	dsl	2000	C-E C1	2000	160
Nicklos Drlg	28	d-e	3000	C-E Electrohoist III	3600	250
ALLEN						
Comet Drlg	10	dsl	1700	Cbot 900	900	105
Grey Wolf Drlg	5	d-e	3000	C-E EDA	2000	250
Power Rig Drlg	20	dsl	1850	Idco E900	900	130
ASCENSION						
Loffland Bros	167	dsl	2160	MC U914C	2400	200
Power Rig Drlg	11	dsl	2700	C-E C1	2000	250
ASSUMPTION						
Explorer Drlg	26	dsl	2000	MC U712EA	2730	160
Nicor Drlg	68	dsl	2100	MC U712A	1200	160
Power Rig Drlg	15	dsl	2350	C-E C1 Type III	1950	160
Santa Fe Drlg	120	d-e	3400	C-E C311E	3000	250
Wilson Bros Drlg	11	dsl	2400	Nat 110	2700	200
BEAUREGARD						
Challenger Drlg	21	dsl	900	S/B N75	1000	120
Comet Drlg	14	dsl	2600	G-D 1500	2600	250
Great Southern Oil & Gas	42	dsl	665	Idco	636	100

LOUISIANA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
BEAUREGARD (Cont'd)						
Grey Wolf Drlg	3	d-e	3000	C-E ECB	2000	250
Nicor Drlg	81	d-m	900	Idco H40	550	80
Woolf & Magee	4	dsl	850	Idco H35	500	100
	6	dsl	850	Idco H35	500	100
	12	dsl	850	Idco H35S	500	100
BIENVILLE						
Sawyer Drlg & Serv	14	dsl	540	Duggan DS5	540	95
BOSSIER						
Butler-Johnson	1	dsl	1900	S/B N85	1900	150
	4	dsl	1200	S/B N75	1200	125
	5	dsl	1800	S/B N95	1800	200
	6	dsl	2000	S/B N85	1900	150
D B Drlg	18	dsl	1000	Schf SC800	1040	130
Justiss Oil	27	dsl	700	Beth MC450	900	120
Murco Drlg	38	d-s	1700	Olwl 660E	700	120
Remco Drlg	1	dsl	900	Cbot 2042	475	100
	2	dsl	1200	S/B TR800	800	120
Transcontinental Drlg-Magnolia	1	dsl	350	C-E GB250T	350	65
	83	dsl	1000	G-D 800	1000	150
CADDO						
Bailey Drlg	1	dsl	1700	Cbot 2550	1000	135
	4	dsl	500	MC U31	350	65
D B Drlg	28	dsl	1650	C-E EDA	1650	150
	29	dsl	1100	Nat 75	1100	135
	30	dsl	1100	Beth 450	1100	129
Justiss Oil	15	dsl	450	Beth 45E	300	65
Lagersen Drlg	6	d-e	2000	Idco 2500E	2500	220
Mosley Well Serv	7	dsl		Cbot	475	100
Nelson Drlg & Well Serv	1	dsl	600	S-H 7000	600	90
	2	dsl	1000	S/B N75	1000	130
Rogers Drlg, Mike	2	dsl	550	S-H 7000	650	93
Shuler Drlg	5	dsl	325	Beth	350	50/ 3.5''
Transcontinental Drlg-Magnolia	22	dsl	750	S/B N7	750	110
Vista Drlg	25	dsl	1000	Idco Super 750	800	125
	31	dsl	600	S/B N4	400	71
	33	dsl	1000	S/B N7	1000	120
Wheless Drlg	1	d-s	3200	C-E C2 Type II	2000	250
CALCASIEU						
Continental Drlg	3	d-e	2600	Idco E1700	1700	190
Delta Drlg	31	dsl	2300	C-E C1 Type III	2592	200
Explorer Drlg	24	dsl	2000	MC U36	800	100
Glendel Drlg	5	d-e	2000	G-D 1100E	2000	18
Goldrus Drlg	2	d-e	2000	Olwl E2000	2000	250
	4	dsl	1200	S/B N75	1040	140
Grey Wolf Drlg	4	dsl	1500	C-E GB800	800	125
JHJ Drlg	5	dsl	1000	OIME SL7	1400	170
Nicor Drlg	72	dsl	2600	Nat 1320M	2000	250
NL Well Serv	247	dsl	700	Cbot 2042	600	75
	298	dsl				
CAMERON						
Bailey Drlg, Pernie	6	dsl	3000	Nat 110M	3000	180
Cliffs Drlg	32	dsl	2600	Nat 110	2475	200
Comet Drlg	8	dsl	1700	Cbot 1200	1200	135
	18	d-s	2700	I-R 2550HL	1500	160
CRC Mallard Well	15	dsl	1300	Wils 90	800	145
Delta Drlg	82	d-s	3200	C-E C2 Type II	3456	250
	85	d-s	2900	C-E C2 Type II	3[illegible]56	250
Goldrus Drlg	15	dsl	1740	Beth M810	1560	160
Great Southern Oil & Gas	37	dsl	1000	Idco	636	100
M N D Drlg-Southern	11	d-e	1820	S/B N95	1820	200
Power Rig Drlg	14	d-s	3200	Idco E2100	4161	250
	18	dsl	3200	C-E C2	2000	250
Resource Drlg	17	dsl	1560	Nat 80B	1835	140
CATAHOULA						
D & D Drlg	2					
Rebel Rig #3 Ltd	3	dsl	500	Idco H30	400	90
CLAIBORNE						
Exeter Drlg Southern	45	dsl	2000	G-D 700	1000	125
Sawyer Drlg & Serv	12	dsl	900	Wils Giant	900	120
Transcontinental Drlg-Magnolia	23	dsl	1000	S/B N75	1000	120
Wheless Drlg	10	dsl	1800	C-E C13	1800	160
CONCORDIA						
D & D Drlg	3	dsl	450	S/B N45	500	82
Energy Drlg	1	dsl	400	Beth S45A	500	90
	2	dsl	535	Idco H35S	540	95
Justiss Oil	17	dsl	350	Beth S45E	350	75
Murco Drlg	58	d-s		Sup 4000E		540
New Drlg, David	5	dsl	450	S-H 5000	500	70
Par-Co Drlg	4	dsl	700	Wils 42	500	80
Wilcox Drillers	5	dsl	700	Beth S45E	550	85
DE SOTO						
Sawyer Drlg & Serv	1	dsl	700	S/B N7	700	110
	10	gas	1200	Whln 1000	1200	130
EAST BATON ROUGE						
Bailey Drlg, Pernie	4	dsl	2900	Nat 1320M	3000	200
Goldrus Drlg	6	d-e	3400	Olwl F2000	1700	200
	10	dsl	1250	Beth MA810	1176	130
	21	dsl	1200	Cbot 1000	872	135
Grey Wolf Drlg	7	d-e	3000	C-E C11	2000	250
Helmerich & Payne Intl Drlg	73	d-e	2835	Olwl 3000M	3400	300
Loffland Bros	21	d-e	3200	MC U1220ERD	2500	300
	114	d-e	3300	MC U1220EBD	3300	300
	116	d-e	3300	MC U1220EBD	3300	300
	330	dsl	2400	MC U1220	2775	220
Noble Drlg	OW-21	e-s	3300	Olwl E2000	3300	250
Parker Drlg	174	dsl	3000	OIME Hercules 3000E	3000	300
Quarles Drlg	19	dsl	1800	Olwl 96	1200	150
Woolf & Magee	3	dsl	1450	G-D 700	1275	135
EAST FELICIANA						
Cliffs Drlg	24	dsl	2600	Nat 1320	2475	250
FRANKLIN						
New Drlg, David	9	dsl	450	S-H 5000	550	70
IBERIA						
Bailey Drlg, Pernie	2	dsl	2000	Nat 80B	1950	140
IBERVILLE						
Dual Drlg	21	dsl	2250	C-E C1	1600	220
Explorer Drlg	10	dsl	1836	Beth	1750	125
Goldrus Drlg	7	dsl	1750	S/B N95	1560	160
	8	d-e	1750	Olwl 840E	1700	180
Grey Wolf Drlg	2	d-e	3000	C-E C11	2000	250
Nicor Drlg	67	d-e	1700	Olwl 66OE	700	150
Resource Drlg	12	dsl	3105	Nat 1625	3740	300
JACKSON						
Culver Drlg	10	dsl	1500	Nat 110	1500	160
	14	dsl	2400	MC U914	2400	160
D B Drlg	27	dsl	820	Nat 50A	820	110
Dual Drlg	9	dsl	2700	Nat 1320M	2000	250
	11	dsl	1850	Olwl 860	1400	180
Justiss Oil	38	dsl	2600	C-E J1100	2600	200
Sawyer Drlg & Serv	4	dsl	1000	S/B N7	1000	125
	6	gas	1200	S/B N75	1200	130
	8	gas	1100	S/B N7	1100	115
JEFFERSON						
D & D Drlg	1	dsl	325	S/B N4A	350	80
Explorer Drlg	16	dsl	1350	MC U1220E13	3300	250
JEFFERSON DAVIS						
Delta Drlg	47	dsl	2300	Nat 130	2250	200
Nicor Drlg	4	dsl	2000	G-D 800	1000	150
	78	d-m	2650	Nat 100	750	140
Power Rig Drlg	17	d-e	2000	Idco E1700	2400	160
LA SALLE						
Justiss Oil	37	dsl	200	J-M500	225	50
	39	dsl	300	J-M 6500	400	65
LAFAYETTE						
Cliffs Drlg	26	dsl	2000	Nat 110	1650	180
	31	dsl	2600	Nat 110	2475	200
Decca Drlg	21	dsl	1600	MC 914C	2100	180
Delta Drlg	76	d-s	3200	G-D 3000RE	4600	300
Explorer Drlg	6	dsl	1300	MC	2730	200
	12	dsl	1300	Idco 700	2730	95
	14	dsl	1300	Cbot 2650	2000	135
	18	dsl	1300	Cbot 2650	2000	135
	20	dsl	800	S/B TR800	2000	110
	30	dsl	2000	S/B TR800	1400	200
JFP Well Serv	6	dsl	2000	Olwl E2000	2000	250
M G F Drlg-Lafayette	41	dsl	1600	Olwl 96	1600	150
	42	dsl	1500	Olwl 96	1500	160
	401	d-e	1600	Nat 320UE	2000	250
Nicor Drlg	73	d-m	1500	Cbot 2550TRD	1200	150
	76	d-m	1700	Nat 75	750	150
Power Rig Drlg	19	dsl	3000	C-E C3	3300	300
	21	dsl	3500	C-E C2	2000	250
	23	d-e	2000	C-E C2	2000	300
Quarles Drlg	16	dsl	2000	Idco Super 711	1100	170
Wilson Bros Drlg	3	dsl	2600	Nat 1320	2700	300
	6	dsl	2600	Nat 1320	2700	300
	9	dsl	2600	Nat 110	2700	200
	10	dsl	2200	Nat 110	2100	200
	23	d-e	2800	Olwl E2000	2000	250
LAFOURCHE						
Bailey Drlg, Pernie	7	dsl	1200	G-D 800	1200	110
	8	dsl	2000	Nat 110M	1500	200
Cliffs Drlg	16	dsl	2600	Nat 1320	2475	250
	18	dsl	2600	Nat 110	2475	200
Comet Drlg	12	dsl	1700	Cbot 1200	1200	135
Goldrus Drlg	11	dsl	1500	S/B N12A	2000	180
Loffland Bros	145	dsl	2955	MC U1220	2955	200
M G F Drlg-Lafayette	47	dsl	1800	Idco S711	1500	180
Nicklos Drlg	25	dsl	2000	C-E A1500	2119	200
Nicor Drlg	77	d-m	2300	Nat 100	750	160
Rio Colorado Drlg	120		1300	S/B N95A	1700	180
LIVINGSTON						
Delta Drlg	65	dsl	2300	C-E C1 Type III	2592	180
Parker Drlg	175	dsl	3000	OIME Hercules 3000E	3000	300
NATCHITOCHES						
Nowotny & Conley Drlg	5	d-e	3200	C-E C3 Type II	3000	300
OUACHITA						
Butler-Johnson	8	dsl	2300	G-D 1500	2200	200
Noble Drlg	N-812	dsl	1420	Nat 80B	1420	150
Nowotny & Conley Drlg	2	dsl	2000	OIME SL-1000	1200	150
Rosamond Drlg	7	dsl	1275	S/B N10	1275	125
Sawyer Drlg & Serv	3	dsl	1100	S/B N7	1100	120
	5	dsl	1500	S/B N75	1500	130
PLAQUEMINES						
CRC Mallard Well	14	dsl	1300	Wils 90	800	145
Wilson Bros Drlg	7	dsl	1400	Nat 80B	1400	125
POINTE COUPEE						
Cliffs Drlg	43	d-e	2600	Nat 1320UE	3300	250
Decca Drlg	23	dsl	1800	Nat 1320M	2700	250
Dual Drlg	28	d-e	3400	Olwl E3000	2300	300
Eljay Drlg	4	d-s	3400	Olwl E3000	3000	300
Helmerich & Payne Intl Drlg	83	d-s	2800	Olwl E2000	2000	260
Parker Drlg	165	dsl	3000	OIME Hercules 3000E	3000	300
	180	dsl	3000	OIME Hercules 3000E	3000	300
Power Rig Drlg	12	dsl	3200	C-E A1500M	2200	300
RICHLAND						
Wheless Drlg	3	dsl	1800	C-E C13	1800	180
SABINE						
B-E Drlg	1	dsl	900	C-E A500	900	100
ST BERNARD						
CRC Mallard Well	17	dsl	1300	Wils 90	800	145
	18	dsl	1300	Wils 90	800	145
	20	dsl	1300	Wils 90	800	145
Delta Drlg	16	dsl	2600	Nat 130	2250	250
ST CHARLES						
Grey Wolf Drlg	6	d-e	3000	C-E C11	2000	250
NL Well Serv	267	dsl	700	Cbot 2042	800	75
	269	dsl	304	Cbot 1287	300	
ST HELENA						
Transcontinental Drlg-Jackson	14					
ST JAMES						
Power Rig Drlg	9	dsl	1850	C-E D3	1450	140
ST LANDRY						
Bailey Drlg, Pernie	5	dsl	1500	Nat 55	1100	120
Delta Drlg	97	dsl	2000	C-E J1100	1560	160
Eljay Drlg	3	d-s	3400	Olwl E3000	3000	300
Goldrus Drlg	1	d-e	2000	Olwl E3000	3000	300
Nicklos Drlg	23	dsl	1850	Nat 110	1755	180
	79	d-e				
	80	d-s	4800	C-E C3	3000	300
Nicor Drlg	32	d-e	2700	MC 1220EB	2000	250
Power Rig Drlg	22	d-e	2700	Idco E1700	1700	180
Wilson Bros Drlg	4	dsl	2600	Nat 110	2700	200
ST MARTIN						
Bay Drlg	1	dsl	3600	Nat 1320M	3600	250/ 5''
Comet Drlg	4	dsl	1700	S/B N75	900	120
Delta Drlg	25	dsl	2300	C-E C1 Type III	2592	180

LOUISIANA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
ST MARTIN (Cont'd)						
Great Southern Oil & Gas	5	dsl	500	Wils	318	60
ML Well Serv	286	dsl	1000	Cbot 2550HL	1500	160
Resource Drlg	7	dsl	1560	Nat 80B	1835	140
Richards Drlg Assocs	10	d-e	3400	Olwl E3000	3000	300
ST MARY						
American Well Serv & Drlg	14	dsl	1700	S/B HI4610A	575	105
American Well Service & Drlg	11	dsl	1700	S/B H14610A	575	80
Comet Drlg	6	dsl	2550	Idco Super 7-11	1700	180
Goldrus Drlg	22	dsl	1250	Cbot 1000	872	135
Loffland Bros	103	d-e	3300	MC U1220EBD	3300	300
Noble Drlg	N-131	dsl	2130	Nat 130	2130	180
	OW-31	el	3135	Olwl E3000	3135	250
Power Rig Drlg	10	dsl	2600	C-E A1500	1450	300
	24	d-e	3300	C-E C3	3000	400
TANGIPAHOA						
Challenger Drlg	34	dsl	1200	S/B N75	1500	120
TENSAS						
Justiss Oil	10	dsl	500	S/B N45	600	100
Murco Drlg	34	dsl	2200	Olwl N760	1350	150
Par-Co Drlg	3	dsl	700	S-H 7000	500	70
Rosamond Drlg	10	e-s	550	Olwl 500	600	100
TERREBONNE						
CRC Mallard Well Drillers	19	dsl	1300	Wils 90	800	145
	52	d-e	3000	Idco E2100	2000	250
Goldrus Drlg	9	dsl	1750	Beth M810	1560	160
Nicor Drlg	201	d-e	2600	Nat 1320UE	2000	250
	202	d-e	2600	Nat 1320UE	2000	250
Resource Drlg	RD-30	dsl	3105	Nat 1625	3740	300
UNION						
H & S Drlg	1	dsl	1700	S/B N95	2145	140
VERMILION						
Butler-Johnson	11	d-e	2000	Nat 110UE	2000	200
	15	dsl	1000	Nat 80B	1950	150
Cliffs Drlg	28	dsl	2600	Nat 1320	2475	250
	30	dsl	2600	Nat 1320	2475	250
Glendel Drlg	6	d-e	2000	G-D 1100E	2000	18
Grey Wolf Drlg	8	d-e	3000	C-E C2 Type II	2000	250
M G F Drlg-Lafayette	44	dsl	2000	MC U914	1500	180
Nicor Drlg	34	d-e	2600	MC U914EC	1500	210
	58	dsl	1600	MC U15	700	120
	74	d-m	2900	Nat 1320M	2000	250
Resource Drlg	1	dsl	3105	Nat 1320	3740	250
	11	dsl	3105	Nat 1625	3740	300
Tesoro Drlg	6	dsl	2600	Nat 1625M	2742	300
WEBSTER						
Butler-Johnson	10	dsl	1500	G-D M800	1500	140
Murco Drlg	2	dsl	2200	Olwl 760E	1000	150
Sawyer Drlg & Serv	7	gas	900	Idco 750	900	130
Wheless Drlg	4	dsl	1800	C-E J1100	1800	160
WEST BATON ROUGE						
JFP Well Serv	4	dsl	2000	Olwl E2000	2000	250
WEST FELICIANA						
JHJ Drlg	6	dsl	1000	OIME SL7	1400	170
Loffland Bros	115	d-e	3300	MC U1220EBD	3300	300
Murco Drlg	26	dsl	2800	Olwl N2000-B	3000	300
Transcontinental Drlg-Jackson	91					
WINN						
Delta Drlg	56	dsl	2600	Wils Super 250	2592	250

MICHIGAN

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
BAY						
Bigard Drlg, James	10	dsl	1200	Idco H44	600	85
CALHOUN						
Bigard Drlg, James	3	dsl	1100	Cbot 550	550	75
Scott Drlg, Don	5	dsl	1000	Idco H1000	900	80
CLARE						
Bigard Drlg, James	12	d-e	2000	Idco ED1200	2000	200
Cardinal Drlg	21	dsl	1000	C-E GC500	1000	125
EATON						
Bigard Drlg, James	9	dsl	1100	Idco H44	600	85
Provins Drlg, T D	6	dsl	1125	Idco 700	700	90

MICHIGAN (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
GRAND TRAVERSE						
Bigard Drlg, James	15	dsl	1100	Idco H1000	1000	120
Cactus Drlg Co	16	dsl	950	Nat 50A	850	100
	21	dsl	1000	Beth M58	850	120
Escor	4	dsl	500	Idco DI7015	600	75
Nicor Drlg	21	dsl	800	Idco H35	400	70
Provins Drlg, T D	3	dsl	1200	Idco 1000	900	100
	4	dsl	1000	Coop 550	500	80
	8	dsl	1200	Idco H1000	1000	120
HILLSDALE						
Escor	5	dsl	949	Idco H35	445	55
INGHAM						
Bigard Drlg, James	8	dsl	1100	Idco H44	600	85
ISABELLA						
L & G Drlg	1	dsl	398	Idco H35	398	50
Nicor Drlg	52	d-m	600	S/B DH14210	550	84
JACKSON						
Bigard Drlg, James	7	dsl	900	Idco H37	535	75
KALKASKA						
Cactus Drlg Co	17	dsl	1000	S/B N55	850	110
	28	dsl	950	Nat 50A	850	100
Nicor Drlg	22	dsl	870	Idco H35	400	75
MANISTEE						
Bigard Drlg, James	16	dsl	950	Idco H44	600	85
	17	dsl	1100	Wils 75	900	120
L & G Drlg	3	dsl	500	C-E GB350	600	100
Nicor Drlg	53	d-m	750	S/B DH14210	550	84
MASON						
Miller Expl	3	dsl	750	OIME SL5	1000	180
MISSAUKEE						
L & G Drlg	2	dsl	500	Wils 65	600	80
OAKLAND						
Provins Drlg, T D	2	dsl	1200	Idco H37	456	80
OSCEOLA						
Bigard Drlg, James	14	dsl	1100	Idco H1000	1000	120
Provins Drlg, T D	7	dsl	1200	Idco H1000	1000	120
OTSEGO						
Cactus Drlg Co	12	dsl	1000	Olwl 66	850	100
Nicor Drlg	24	dsl	1185	Idco H525	850	90
Provins Drlg, T D	5	dsl	1200	Idco 1000	1000	120
ROSCOMMON						
Provins Drlg, T D	9	dsl	2100	Cbot 2550HL	1800	200
WEXFORD						
Provins Drlg, T D	10	dsl	1200	Idco H1000	1000	120

MISSISSIPPI

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Harris Well Serv	30	dsl	2000	Idco 1200	1400	135
New Drlg, David	14	dsl	1500	C-E C2	2000	220
Penrod Drlg	10	dsl	2600	Nat 1320M	3425	250
	12	dsl	3850	G-D 1500	2120	200
	24	dsl	2600	S/B N12A	1950	250
	109	dsl	2000	S/B N75A	1760	150
	112	dsl	1600	Nat 1625M	3000	300
	120	dsl	1600	Nat 1625M	3000	300
SEE Land Drlg	3	dsl	1200	G-D 500	500	90
	7	dsl	1200	S/B N4	325	65
	15	dsl	900	G-D 1100	1500	160
ADAMS						
Energy Drlg	3	dsl	2000	C-E D3	2000	180
Wilcox Drillers	7	dsl	300	Beth 545A		80
AMITE						
Justiss Oil	22	dsl	1800	Nat 80B	1420	140
	23	dsl	1800	C-E J1100	2400	200
	26	dsl	940	C-E GB500	940	120
	34	g-b	700	Beth M58	1000	120
CLARKE						
Grace France Drlg	5	el	2400	Olwl 760E	2400	170
Helmerich & Payne Intl Drlg	72	dsl	2835	Olwl 3000M	2835	300
	77	d-e	2200	Nat 110UE	2430	180
Murco Drlg	22	dsl	2400	S/B N95	2400	200
New Drlg, David	8	dsl	1200	Nat 80B	1200	150
	10	dsl	900	C-E GB500	600	115
Transcontinental Drlg-Jackson	18					
COVINGTON						
Marion Drlg	8	d-e	2400	C-E C1	2400	200

MISSISSIPPI (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
FRANKLIN						
Justiss Oil	16	dsl	600	C-E GB	900	120
Rebel Rig #3 Ltd	2	dsl	350	Beth S455	350	80
GREENE						
Marion Drlg	7	dsl	2400	C-E C1	2400	200
HANCOCK						
Chesley Pruet Drlg	15	dsl	4800	C-E C3	4800	300
Raped Drlg	2	dsl	1800	C-E GB500	1200	140
HINDS						
Quarles Drlg	14	dsl	2700	MC U914C	2400	220
Transcontinental Drlg-Jackson	12					
HUMPHREYS						
Nicor Drlg	15	dsl	2100	Olwl 76	1000	150
ISSAQUENA						
Transcontinental Drlg-Jackson	92					
JASPER						
Marion Drlg	1	dsl	1800	C-E M810	1800	180
Nicor Drlg	80	d-m	780	Wils Mogul 42	450	90
Par-Co Drlg	1	dsl	300	Idco H30	300	60
Transcontinental Drlg-Jackson	85					
Wilson Bros Drlg	2	dsl	1900	Nat 110	1900	200
JEFFERSON						
Wilcox Drillers	6	dsl	1100	C-E 550	800	125
JEFFERSON DAVIS						
Chesley Pruet Drlg	12	dsl	3600	C-E C2	3600	250
JONES						
Chesley Pruet Drlg	16	dsl	3600	C-E C2	3600	300
Exeter Drlg Southern	15	dsl	2550	G-D 1100	1550	180
	32	dsl	2800	G-D 1500	2800	250
Marion Drlg	4	dsl	2400	C-E C2	2400	250
New Drlg, David	7	dsl	500	MC U34	525	80
Nicor Drlg	48	d-e	2700	MC U1220EB	2000	250
Raped Drlg	4	d-e	4000	C-E C1	2000	250
	6	d-e	2000	C-E D3	1000	160
Tesoro Drlg	3	dsl	2600	Nat 1320M	2742	250
	5	dsl	2000	Nat 80B	1650	150
	8	dsl	3200	Nat 1320	3600	300
Transcontinental Drlg-Jackson	84					
LAMAR						
Nicor Drlg	18	dsl	1300	MC U15	700	125
LINCOLN						
Delta Drlg	35	d-s	2000	C-E C1 Type II	3100	200
Justiss Oil	8	dsl	450	C-E GA500	900	110
Marion Drlg	2	dsl	2400	C-E C1	2400	200
MADISON						
New Drlg, David	12	dsl	800	Wils Giant	800	130
MONROE						
Raped Drlg	5	dsl	950	Nat 370	950	120
PEARL RIVER						
Helmerich & Payne Intl Drlg	75	dsl	3300	Nat 1625M	3845	300
PIKE						
SEE Land Drlg	9	dsl	1500	Nat 100	1200	140
RANKIN						
Helmerich & Payne Intl Drlg	71	dsl	1800	Nat 1320M	1830	230
SCOTT						
Murco Drlg	10	dsl	2200	S/B N95	2400	200
SIMPSON						
Helmerich & Payne Intl Drlg	74	dsl	3300	Olwl	3895	300
	86	d-s	4250	Nat 1625DE	4250	300
SMITH						
New Drlg, David	11	dsl	900	C-E GA500	600	115
WARREN						
Justiss Oil	7	dsl	1800	C-E J1400	2900	200
	35	dsl	1250	C-E J1400	1200	180
Marion Drlg	6	dsl	3300	C-E C3	3300	300
Murco Drlg	46	d-s	2800	Olwl E2000	2000	300

MISSISSIPPI (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
WAYNE						
Justiss Oil	24	dsl	3600	C-E J1400	3000	220
New Drlg, David	6	dsl	450	Beth C50	600	110
Tesoro Drlg	1	dsl	2600	Nat 1320M	2742	250
WILKINSON						
Helmerich & Payne Intl Drlg	41	dsl	1650	Nat 110	1815	220
JHJ Drlg	4	dsl	1000	OIME SL7	1400	170
Marion Drlg	5	dsl	2400	Olwl M2000	2400	250
Tesoro Drlg	7	dsl	2000	Nat 80B	1650	150

MONTANA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Bawden Drlg Ltd, Peter	14E	d-s	2500	Nat 1320UE		250
Comanche Drlg Co	1	dsl	430	Idco H30	400	50
	2	dsl	430	Idco H30	400	50
	5	dsl	430	Idco H30	400	50
Penrod Drlg	101	dsl	1684	S/B N46	1080	100
BEAVERHEAD						
Cardinal Drlg	17e	d-e	2000	C-E D3	2000	180
BIG HORN						
Aspen Drlg	1	dsl	400	Ewb 3500	475	35
Molen Drlg	4	dsl	1350	S/B N75A	1350	150
DANIELS						
Grace-Bomac Drlg	27	dsl	1010	S/B N55	750	95
DAWSON						
Enopco	4	dsl	1600	Nat 610	2100	140
FALLON						
Atco Drlg	17	d-e	1200	Nat 610E	120	120
Cliffs Drlg	6	dsl	1600	Nat 610	1100	125
Shelby Drlg	54-E	d-e	1000	Nat 370ESCR	650	100
Spartan Drlg	11	d-m	600	Sup 700	700	110
	19	d-m	600	Sup 700	700	110
FLATHEAD						
Parker Drlg	166	d-e	3000	OIME 3000E	3000	300
GLACIER						
Anderson-Myers Drlg	8	dsl	1800	Nat 80	1800	160
Blocker Drlg-Houston	53					140
	55					140
Simmons Drlg	31	dsl	350	S-H 6000	350	65
GOLDEN VALLEY						
Elenburg Expl	10	dsl	320	Elenburg	430	60
HILL						
Elenburg Expl	5	dsl	320	W-N CC2000	180	25
K B Drlg	1	dsl	278	Crdw A150A	185	45
	2	dsl	278	Crdw AH-91	185	50
LEWIS & CLARK						
Cardinal Drlg	16e	d-e	2000	C-E D3	2000	180
LIBERTY						
Simmons Drlg	46	dsl	350	Troy M600	350	75
McCONE						
Cardinal Drlg	1	dsl	864	BDW 800	1140	140
MUSSELSHELL						
Simmons Drlg	36	dsl	350	Hycalog HH600P	350	68
	47	dsl	350	Troy M600	350	75
PARK						
Molen Drlg	5	dsl	1200	S/B N46	800	120
PHILLIPS						
Elenburg Expl	8	dsl	320	W-N CC2000	230	25
PRAIRIE						
True Drlg	22	dsl	1200	Nat 55	1200	130
RICHLAND						
Blocker Drlg-Houston	58					140
Brinkerhoff-Signal	10	dsl	1000	MC U40	1000	130
Enopco	2	dsl	1800	Nat 610	2100	140
Noble Drlg	N-810	dsl	1606	Nat 80B	1606	150
Transcontinental Drlg-Denver	82	dsl	1000	G-D GD700	1470	125
TMBR Drlg	16	dsl	700	Nat 50CA	600	105

MONTANA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
ROOSEVELT						
Apollo Drlg	8	dsl	1200	Olwl 76	1200	105
Brinkerhoff-Signal	80	dsl	1500	Nat 80B	1500	160
Challenger Drlg	31	dsl	1200	S/B N75	1200	120
Kenting Drlg	3	dsl	615	C-E 500	800	110
Noble Drlg	N-811	dsl	1606	Nat 80B	1606	150
Transcontinental Drlg-Denver	31	dsl	1200	Wils 90B	1354	150
Westburne Drlg	62	dsl	1050	Nat 50A	1200	110
ROSEBUD						
Soape Drlg	1	dsl	950	Nat 45	950	75
SHERIDAN						
Anderson-Myers Drlg	3	dsl	1200	C-E G500	1200	110
Forwest	3	d-s	2000	Idco 1200E	1600	160
Grace-Bomac Drlg	37	dsl	1000	G-D 700M	1000	125
Nicor Drlg	40	d-e	1700	Olwl 660E	700	120
	62	dsl	1000	Nat 610	750	125
Noble Drlg	N-89	dsl	800	Nat 80B	800	130
Transcontinental Drlg-Denver	39	dsl	1100	G-D GD800	1300	135
TETON						
Aikins Drlg	2	dsl	200	B-E	200	30
TOOLE						
Elenburg Expl	2	dsl	320	W-N CC2000	230	25
VALLEY						
Challenger Drlg	1	dsl	900	C-E BC500	1000	110
	24	dsl	500	S/B N4A	650	65
Drilcon	1	dsl	1125	Beth 450	1125	110
	5	dsl	715	Idco H725	700	110
Helmerich & Payne Intl Drlg	53	d-e	1200	Idco H525	800	120
WIBAUX						
Dixilyn-Field Drlg	37	dsl	1600	Nat 80UE	2000	150
YELLOWSTONE						
Molen Drlg	6	d-e	3000	C-E C1 Type II	2000	220

NEBRASKA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
MOXA Drlg	1	dsl	540	Idco 35	380	70
BANNER						
Toltek Drlg	1	dsl	440	S/B N4	440	85
DUNDY						
Murfin Drlg	7	dsl	525	Nat T32	400	60
HITCHCOCK						
Murfin Drlg	20	dsl	525	Nat 370	600	75
	24	dsl	525	Idco H35SC	475	65
Stoeppelwerth Drlg	1	dsl	375	Nat T32	375	55
MORRILL						
Banner Drlg	4	dsl	400	Apache 25040	375	50
RED WILLOW						
Stoeppelwerth Drlg	2	dsl	375	C-E 250	375	45
SCOTTS BLUFF						
Banner Drlg	3	dsl	500	Nat T45	800	95

NEVADA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
CHURCHILL						
Veco Drlg	7	dsl	1550	OIME 1000	1000	160
CLARK						
Continental Drlg	17	d-e	2600	Idco E1700	1700	190
Loffland Bros	211	dsl	1260	MC U15	1000	100
EUREKA						
Brinkerhoff-Signal	9	dsl	550	S/B N45	600	75
WHITE PINE						
Montgomery Drlg	48	dsl	2000	Nat 110	2000	200

NEW JERSEY

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
New Jersey Drlg	T5	dsl	400	I-R	400	50

NEW MEXICO

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Stewart Bros Drlg	45	dsl	324	Fail 2500	324	30
	51	dsl	324	Fail 2500	324	30
	52	dsl	324	G-D 15W	324	15
	54	dsl	1000	Fail 100	450	50
BERNALILLO						
Earl & Sons Drlg	1		1500	I-R	3800	15
	2					
CHAVES						
Artesia Fishing Tool	2	dsl	500	G-D	500	60
Hondo Drlg	4	dsl	1650	S/B N75	1100	140
L & M Drlg	1	dsl	750	G42	440	75
La Rue Drlg	1	dsl	650	Nat T20	500	70
W E K Drlg	3	dsl	450	C-E S45E	440	65
DONA ANA						
Bayless Drlg	7	dsl	1500	G-D GD700	1200	140
Dual Drlg	26	dsl	2550	Wils 150A	1650	180
EDDY						
Ard Drlg	1	dsl	600	S-H	670	85
	5	dsl	1986	MC U20	1800	150
Artesia Fishing Tool	1	dsl	400	May 3000	200	40
Cactus Drlg Co	25	dsl	1450	Idco L711	110	120
	73	dsl	300	MC U34	454	65
Collier Drlg	10	dsl	600	Chal	475	55
Delta Drlg	60	d-e	1825	C-E D3 Type II	2592	160
Dual Drlg	31	dsl	1600	Olwl 500	600	9000
	37	dsl	1600	Olwl 500	700	100
Hondo Drlg	12	dsl	1250	G-D 800	1250	150
Kenai Drlg of New Mexico	22	dsl	1700	C-E J1100	1700	150
	37	dsl	1750	Nat 100M	1750	180
L & M Drlg	2	dsl	750	G-D 3000	380	60
La Rue Drlg	2	dsl	500	G-D 3000	500	60
Landis Drlg	4	dsl	800	S/B N45	700	100
M G F Drlg-Midland	23	dsl	1150	Olwl 76	1150	135
	26	dsl	1725	G-D 1100	1725	190
McVay Drlg	7	dsl	1200	Nat 75CA	1200	130
	9	dsl	1400	Nat 110	1400	180
Parker Drlg	2	dsl	1200	OIME SL1000P	1200	140
	34	gas	1000	Nat 75	1000	160
	161	gas	1000	Nat 75	1000	160
Resource Drlg	6	dsl	2330	Nat 110	2740	180
Sharp Drlg	65	dsl	1560	C-E D3	1836	180
W E K Drlg	1	dsl	770	MC U34	380	75
Willbros Drlg	1	dsl	1200	Olwl 76	1200	140
	6	dsl	800	C-E G500	800	120
HARDING						
Aztec Well Serv	171	dsl	600	Wils M75	700	80
HIDALGO						
Loffland Bros	37	d-e	2160	MC U914B	2400	200
LEA						
Ard Drlg	6	dsl	1200	MC U15	1200	115
	7	dsl	1200	MC U40	1200	140
Aztec Well Serv	184	dsl	600	Wils M75	1100	120
	289	dsl	600	Crdw KB500	750	85
Cactus Drlg Co	8	dsl	900	S/B N7	1200	110
	9	dsl	900	S/B N75	1200	130
	23	dsl	2000	Nat 110	2550	200
	27	dsl	2200	S/B N20	2550	250
	55	dsl	600	Idcu H35	670	65
	58	dsl	550	Beth S45E	454	60
	67	dsl	550	Nat T32	454	65
	68	dsl	500	Idco H30	454	60
	69	dsl	750	Nat 370	718	100
	70	dsl	800	Nat 370	916	100
Delta Drlg	3	dsl	2300	C-E C1 Type III	2331	180
Hondo Drlg	3	dsl	1100	Beth M58C	800	130
	5	dsl	1100	Nat 55C	800	130
	7	gas	1000	S/B N55	750	120
	10	dsl	1250	S/B N75A	1250	150
Kenai Drlg of New Mexico	2	dsl	2000	C-E J1100	2000	150
	10	dsl	365	C-E GA250T	425	65
	21	dsl	1350	MC U20	1350	150
	23	dsl	1800	C-E JB1250	1800	150
	31	dsl	650	MAC 300	400	65
	36	dsl	650	Wils Giant	700	105
Landis Drlg	1	dsl	1000	BDW 650M	1000	130
McVay Drlg	4	dsl	850	Nat 75	850	120
	8	gas	1200	Nat 80B	1200	150
	10	dsl	1300	Nat 100	1300	160
Moranco	1	dsl	1100	OIME 1000SL	1000	150
	2	dsl	1100	C-E GB800	1000	150
	3	dsl	1100	MC 712A	1000	150
	5	dsl	750	MC U15	750	110
	6	dsl	750	S/B N75	750	120
	7	dsl	1100	S/B N75	1000	150
	9	dsl	750	S/B N55	750	110
	10	dsl	1100	MC	750	110

NEW MEXICO (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
LEA (Cont'd)						
Parker Drlg	38	gas	1200	Nat 100M	1200	180
	58	dsl	1650	Nat 100M	1650	160
	65	gas	1600	Nat 100M	1600	230
	85	gas	1600	Nat 130	1600	230
	90	gas	1800	Nat 130	1800	250
	198	gas	1600	OIME 1500C	1600	220
Rio Colorado Drlg	142	dsl	1825	Nat 110	1650	180
Rod Ric	11	dsl	450	Nat T20	440	70
Sharp Drlg	35	dsl	2331	Beth 1013	2742	230
	36	dsl	2331	Beth MC950	2742	220
	369	d-e	1488	MC U712EC	1995	180
Sierra Drlg Co	3	dsl	500	C-E D2	1000	130
Sterling Drlg (TX)	20	dsl	1260	Nat 610	840	130
Tri-Service Drlg	2	dsl	1400	Olwl 66	900	100
	8	g-b	750	Olwl 76	750	130
TMBR Drlg	29					
Verna Corp	16	dsl	600	S/B N14	450	65
W E K Drlg	2	dsl	1200	Idco H35	480	120
Willbros Drlg	3	dsl	800	MC U15	800	110
	5	gas	1100	Beth 450	1100	130
	7	dsl	1400	C-E A800	1400	160
Wilson Bros Drlg	19	dsl	800	Nat 80B	1425	160
	21	dsl	800	Nat 80B	1425	160
Young Drlg	4	dsl	400	Crdw K500	600	85
	5	dsl	750	Crdw K500	600	80
McKINLEY						
Antelope Drlg	1	dsl	600	Cbot Comet 50	500	65
Stewart Bros Drlg	53	dsl	324	G-D 15W	324	15
RIO ARRIBA						
Arapahoe Drlg	7	g-b	700	Nat T45	700	100
	10	g-b	700	Nat 50A	500	120
Aztec Well Serv	222	dsl	750	Wils M75	1100	120
Four Corners Drlg	3	dsl	1500	Crdw KB500	700	80
	6	dsl	1500	Crdw KB500	700	80
	10	dsl	1500	Crdw	750	80
	11	dsl	1500	Crdw KB500	636	80
LLL Drlg	2	dsl	1720	Cbot 750	880	100
Young Drlg	2	dsl	600	Idco DIR701	600	85
ROOSEVELT						
Sitton Drlg	5	dsl	450	Wils 75P	900	115
SAN JUAN						
Arapahoe Drlg	3	g-b	300	Wils Mogul	320	65
	6	dsl	300	Nat T32	350	80
	11	g-b	300	Nat T32	320	90
Aztec Well Serv	50	dsl	400	Wils Mogul	350	60
Energy Search Drlg	2	dsl	1500	Cbot 900	900	100
Four Corners Drlg	7	dsl	1500	Crdw KB500	750	80
	12	dsl	1500	Crdw KB500	636	80
True Drlg	4	dsl	450	C-E GA250T	500	65
SANDOVAL						
Brinkerhoff-Signal	78	dsl	1600	Nat 610	1100	125
Four Corners Drlg	2	dsl	1500	Crdw KB500	700	80
	9	dsl	1500	Crdw KB500	750	80
Nicor Drlg	41	dsl	2000	G-D 1100M	1500	210
Young Drlg	3	dsl	400	Wils 75	600	85
SIERRA						
Cactus Drlg Co	14	dsl	800	Olwl 66	1200	110
UNION						
Aztec Well Serv	56	dsl	400	Wils Mogul	350	60
Baker & Taylor Drlg	18	dsl	700	C-E GB250T	465	60

NEW YORK

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
CHAUTAUQUA						
International Petr Serv	7	dsl	475	Chal 320	360	40
	8	dsl	600	Wils Mogul 42	475	75
	9	dsl	475	Chal Model 320HD	360	45
	10	dsl	600	Wils Mogul 42	475	75
	12	dsl	475	Chal Model 320	360	40
Underwater Gas Dev	1	dsl	250	Fail 3500	200	40
	3	dsl	320	Chal 320	320	50
	4	dsl	320	Challenger 320	320	50
	5	dsl	250	Fail 3500	250	50
	7	dsl	320	Chal 320	320	50

NORTH DAKOTA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Blocker Drlg-Houston	51					180
	52					160
	54					140

NORTH DAKOTA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED (Cont'd)						
KCA Drlg	C3	dsl	1200	Nat 80B	1200	120
Penrod Drlg	103	dsl	1760	Nat 80B	2000	200
	104		2000	Nat 80B	1760	150
	105	dsl	1575	Nat 80B	1760	150
BILLINGS						
Anderson-Myers Drlg	16	dsl	2300	Nat 55	1200	130
Brinkerhoff-Signal	1	dsl	1100	G-D 800	1100	130
	74	dsl	1500	G-D GD800	1500	150
Cardinal Drlg	10	dsl	1296	C-E GB800	1296	135
	11	dsl	864	BDW 800	1140	140
Dixilyn-Field Drlg	35	d-e	1600	Nat 80UE	2000	150
Drilcon	2	dsl	1176	Nat 80B	1176	145
Enopco	7	dsl	2000	Nat 80B	1800	180
Grace-Bomac Drlg	92	dsl	1000	G-D 700M	1000	125
Kenting Drlg	8	dsl	615	Nat 610	800	130
	48	dsl	1400	Nat 610	1400	125
Noble Drlg	E552	dsl	800	C-E A550	800	130
	N-57	dsl	800	Nat 55	600	120
	N-84	dsl	1320	Nat 80B	1320	150
	814	dsl	1606	Nat 80B	1606	150
Ratliff Drlg	6	dsl	1650	C-E GB800	1650	170
	15	dsl	1650	Nat 80B	1650	180
Westburne Drlg	59	dsl	1100	Idco M750D	800	100
BOTTINEAU						
Cardinal Drlg	3	dsl	400	Nat T20	400	55
	8	dsl	400	Nat T20	440	55
	34	dsl	400	C-E GB160	400	45
	35	dsl	1120	SOS 6000S	480	75
BOWMAN						
Burris Drlg	118	dsl	850	MAC 400	500	105
Cardinal Drlg	7	dsl	1120	C-E GB500	864	105
Grace-Bomac Drlg	46	dsl	1125	Nat 610M	1125	125
BURKE						
Cardinal Drlg	5	dsl	541	C-E GB250	560	75
Grace-Bomac Drlg	21	dsl	520	Idco H35SC	260	70
Kenting Drlg	44	dsl	550	C-E GB350	550	85
Shelby Drlg	5	dsl	360	Coop LTO550	450	75
DIVIDE						
Grace-Bomac Drlg	30	dsl	1500	Olwl 96	1500	180
	39	dsl	1000	S/B N75	1000	125
	48	dsl	1500	G-D 800M	1500	160
	60	dsl	1500	Nat 80B	1500	160
Kenting Drlg	1	dsl	1500	Nat 80B	1500	150
	4	dsl	450	C-E GB350	700	90
	14	dsl	1500	Nat 80B	1500	150
Nicor Drlg	26	dsl	1100	Nat 50A	425	115
Transcontinental Drlg-Denver	50	dsl	820	G-D GD800	1470	135
West Wind Drlg	59	dsl		Nat 80B	1800	150
DUNN						
Brinkerhoff-Signal	11	dsl	1500	Nat 80B	1500	150
Dual Drlg	27	dsl	1200	C-E D3	1000	160
Grace-Bomac Drlg	33	dsl	1500	Olwl 96	1500	140
	49	dsl	1500	G-D 800M	1500	160
	52	dsl	1500	Nat 80B	1500	160
Noble Drlg	OW-861	dsl	2400	Olwl 860	2400	180
Westburne Drlg	61	dsl	1050	Nat 55	1320	125
GOLDEN VALLEY						
Grace-Bomac Drlg	41	dsl	700	S/B N7	700	100
Kenai Drlg West Coast	1	dsl	2450	C-E A800	2450	150
HETTINGER						
Transcontinental Drlg-Denver	81	dsl	1000	G-D GC800	1470	150
McKENZIE						
Atco Drlg	10	d-e	2000	Nat 80UE	2000	160
Blocker Drlg Canada	1	dsl	1000	OIME 1500SL	1500	180
	2	dsl	1000	OIME 1000SL	1500	160
	5	dsl	800	S/B N75	1200	130
	8	dsl	770	OIME 750SL	1155	140
	11	dsl	1000	Nat 80B	1500	150
Brinkerhoff-Signal	65	dsl	1000	Nat 80B	1000	160
Burris Drlg	101	dsl	1500	G-D 1100M	1500	200
	102	dsl	1000	G-D 700	1000	145
Cardinal Drlg	22	dsl	1554	Nat 80B	1554	150
Drilcon	3	dsl	784	Nat 50A	784	100
	4	dsl	1800	Nat 110	1800	150
Dual Drlg	3	dsl	1500	Wils 120	1650	150
	17	dsl	1550	Beth M58	750	125
Forwest	4	d-s	2000	Idco 1200	1600	160
Grace-Bomac Drlg	25	dsl	1500	Nat 80B	1500	150
	36	dsl	1500	Nat 80	1500	150
	38	dsl	1000	G-D 700M	1000	125
	42	dsl	1000	G-D 700M	1000	125
	47	dsl	1500	Nat 80B	1500	160
	51	dsl	2250	Nat 110M	2250	200
	54	dsl	1125	Nat 610M	1125	125
	57	dsl	1500	G-D 800M	1500	160
	58	dsl	1500	Nat 80B	1500	160

NORTH DAKOTA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
McKENZIE (Cont'd)						
Helmerich & Payne Intl Drlg	15	dsl	1230	Olwl 76	1365	150
Kenai Drlg West Coast	12	dsl	850	Nat 50A	950	100
	27	dsl	1000	Nat CA75	1150	140
	33	dsl	800	Wils Giant	1000	120
Kenting Drlg	2	dsl	1200	MC U40	1200	140
	6	dsl	1500	S/B N85	1500	150
	7	dsl	615	U36A	800	115
	11	dsl	1200	MC U40	1200	140
	43	dsl	600	C-E GA500	600	105
	47	dsl	800	MC 36A	800	110
	30-E	d-e	2000	Nat 80UE	1000	150
Nicor Drlg	16	dsl	1550	Olwl 76	1000	150
	27	dsl	2000	S/B N95	1500	180
	59	dsl	1400	Nat 55M	700	145
Shelby Drlg	52	dsl	1500	OIME SL7	1500	160
Spartan Drlg	8	d-e	1000	Sup 1000E	1000	160
Tierra Drlg	14	d-e	1000	BDW 800MX	750	140
Transcontinental Drlg-Denver	46	dsl	2000	Nat 80B	1956	150
True Drlg	21	dsl	1800	Nat 80B	1800	150
	23	dsl	1800	MC U712A	1800	160
West Wind Drlg	52					
	56	dsl		Nat 80B	1800	150
Westburne Drlg	63	dsl	1000	OIME SL7	1400	150
MC LEAN						
Atco Drlg	58	d-e	1800	Nat 80UE	1800	160
MORTON						
Burris Drlg	103	dsl	1000	G-D 700	1000	145
MOUNTRAIL						
Blocker Drlg Canada	4	dsl	770	OIME 750SL	1155	140
Brinkerhoff-Signal	77	dsl	1500	G-D 800M	1500	135
RENVILLE						
Cardinal Drlg	6	dsl	560	C-E GB250	440	65
	12	dsl	560	SOS 6000	480	65
	14	dsl	560	C-E GB350	840	85
STARK						
Cliffs Drlg	14	dsl	1200	C-E J1250	900	150
Grace-Bomac Drlg	40	dsl	1000	Olwl 76	1000	130
Noble Drlg	E551	dsl	800	C-E A550	800	130
WARD						
Grace-Bomac Drlg	26	dsl	1010	G-D 500M	750	35
	31	dsl	630	Beth S45E	370	80
Phelps Drlg	20	dsl	326	TSM 6000	450	75
WILLIAMS						
Challenger Drlg	22	dsl	1400	Nat 110	1800	180
Cliffs Drlg	36	dsl	1700	C-E JB1250	1650	160
Forwest	5	d-s	2000	Nat 80UE	2000	160
Grace-Bomac Drlg	34	dsl	700	S/B N7	700	100
	35	dsl	2250	Nat 110M	2250	200
	50	dsl	1500	Nat 80B	1500	160
	55	dsl	1500	G-D 800M	1500	160
Helmerich & Payne Intl Drlg	88	dsl	1815	Olwl 860	1815	160
Nicor Drlg	25	dsl	1700	Nat 125	1200	150
Noble Drlg	N-82	dsl	1200	Nat 80	1200	150
Pruet-Ram-Co	1	d-e	2000	C-E D3	2000	180
	2	dsl	3000	C-E C1	3000	200
	3	dsl	1800	C-E D2	1200	150
	5	dsl	1800	C-E D2	1200	140
TMBR Drlg	19	dsl	700	Nat CA50	700	100
	21	dsl	1100	Nat 75CA	1100	130
	22	dsl	700	S/B N75	750	140
	23	dsl	1100	Nat 75CA	1100	140
	27	dsl	1750	G-D 700	800	140
	28	dsl	1650	G-D 800	1650	160

OHIO

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Devonian Drlg	1	dsl	325	Kremco K600	475	70
	2	dsl	505	Cbot 2042	475	60
ASHTABULA						
International Petr Serv	4	dsl	475	Wils 42	475	75
	6	dsl	475	Wils 42	475	75
P E P Drlg	2	dsl	500	Idco H35S	350	65
	3	dsl	650	Nat T45	600	75
Underwater Gas Dev	2	dsl	200	I-R T5	350	50
ATHENS						
Mid Atlantic Oil	1	dsl	400	Idco Rmbr 5525	480	70
GEAUGA						
P E P Drlg	1	dsl	550	S/B N45	450	75
	4	dsl	550	G-D 500	500	70

OHIO (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
HOCKING						
Beverly Drlg	1	dsl	2600	Idco	600	60
	2					
HOLMES						
Mid Atlantic Oil	4	dsl		Idco Rmbr	325	56/ 3.5"
MEDINA						
Armstrong Drlg	10	dsl	380	May 3000 Port	350	40
Miller Contract Drlg	21	dsl	425	S-H 6000	425	70
MEIGS						
Smith Petr, Carl E	6	dsl		Idco BIR5525	500	75
MORGAN						
Mid Atlantic Oil	2	dsl	500	Idco Rmbr 5525	480	70
	3	dsl	500	Wils 42	500	85
MORROW						
Sheldon & Son, R H	1	dsl	450	W-N 25040	350	60
PORTAGE						
P E P Drlg	7	dsl	550	C-E WS1	470	75
STARK						
Armstrong Drlg	27	dsl		Wils Mogul 42	280	75
SUMMIT						
P E P Drlg	6	dsl	550	Idco H35S	350	65
TRUMBULL						
Armstrong Drlg	11	dsl	380	Wils Mogul 42	380	75
WAYNE						
Armstrong Drlg	12	dsl	380	May 3000	318	40

OKLAHOMA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
ACT Drlg	1	dsl	1750	G-D 6D 800	1000	160
	2	dsl	1750	Nat 125	1950	230
Baltic Drlg	10	dsl	940	Sup 700	600	95
Big Chief Drlg	20	gas	1200	MC U40	960	135
	36	dsl	1400	Nat 55	900	110
Bighorn Drlg	1	dsl	1200	Nat 370	900	90
	3	dsl	800	Idco H37	500	65
	4	dsl	1000	MC U15	1000	100
	5	dsl	1200	MC U15	1000	100
Blocker Drlg-Houston	20					90
	25					120
	26					140
Crescent Drlg	1	dsl	400	Beth S45E	400	70
Forex Neptune and/or Affil	54	d-e	3200	G-D 1500E	2000	217
Fossil Drlg	1	dsl	1150	C-E GB350	800	100
	2	dsl	1350	G-D 500M	900	120
	4	dsl	1300	MC U15	900	125
M G F Drlg-Lafayette	46	dsl	1800	Idco S711	1500	180
Mar-Tay Drlg	1	dsl	450	Crwdll K200C	350	50
Noble Drlg	OW-842	e-s	2000	Olwl 840	2775	200
Penrod Drlg	3	dsl	2600	Nat 1320M	3425	250
	8	dsl	2600	Nat 1320M	3425	250
	21	dsl	2600	Nat 1320M	1950	150
	26	dsl	2600	C-E C2	1950	250
	118	dsl	1600	Nat 1625M	3000	300
	126	dsl	1000	Nat 80B	1760	150
	127	dsl	1000	Nat 80B	1760	150
	129	dsl	1000	Nat 80B	1760	150
	130	dsl	1000	Nat 80B	1760	150
	131	dsl	1000	Nat 80B	1760	
	132	dsl	1000	Nat 80B	1760	
Quanza Drlg	1	dsl	300	Nat 300B	300	55
	2	dsl	250	S/B N4	450	45
Ratliff Drlg	2	gas	1020	Nat 55	1020	140
Robinson Bros Drlg	Gary Jack	d-e	2000	G-D	2000	180
	3	dsl	1000	Wils 75	900	90
	5	dsl	1000	Olwl 66	900	110
	6	dsl	2200	Nat	1600	180
	7	d-e	1750	Nat 80UE	1500	120
	12	dsl	800	G-D 700	1000	120
	14	dsl	900	Nat 50	800	110
	18	dsl	2000	G-D 1500E	2000	200
	20	dsl	1000	S/B N95	300	200
	22	dsl	2000	C-E E900	2000	150
	23	d-e	3200	C-E C2	2000	260
	24	d-e	3200	C-E Electra Hoist	2000	250
	25	dsl	3000	OIME SL7	3000	200
	26	dsl	1050	Idco H725	1500	160
	27	dsl	1050	Idco H725	1500	180
Rockwell Drlg	20	dsl	670	MAC 350	550	65
	22	dsl	670	C-E G36	450	70

OKLAHOMA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED (Cont'd)						
Scott Drlg, Jerry	1	dsl	350	S/B N4	350	55
Thomas Drlg	10	dsl	600	Wils Super Giant	600	110
Warren Interstate Drlg	1	dsl	1000	Cbot 2042TDHT	700	107
ALFALFA						
Dean Drlg	1	dsl	1100	Idco H40	1000	110
FWA Drlg	21	dsl	1000	Wils Mogul 42	720	100
Thomas Drlg	4	dsl	600	C-E 500	600	102
Vaughn Good Drlg	3	dsl	500	Coop 600	500	90
ATOKA						
Grace Miller Drlg	110	dsl	1500	OIME SL1500	1500	200
Lagersen Drlg	4	d-e	2000	C-E J1100E	2500	220
BEAVER						
Bravo Drlg	3	dsl	870	BDW 800	870	140
Damac Drlg	3	dsl	930	Wils Mogul	620	95
Eagle Drlg	4	dsl	1100	MC U15	850	100
N R G Drlg	1	dsl	560	Wils Mogul 42	560	70
Robinson Bros Drlg	1	dsl	1750	S/B N75	1500	120
Sage Drlg	3	dsl	400	Idco H40	400	85
Slawson Drlg	6	dsl	360	Idco H525	480	85
Triad Drlg	4	dsl		S/B N7	800	110
Zenith Drlg	8	dsl	600	C-E GB350	600	85
BECKHAM						
Atco Drlg Southern	14	d-e	3200	Nat 1320E	2000	220
Big Chief Drlg	45	dsl	1500	S/B N95A	2250	180
Challenger Drlg	7-E	dsl	900	Nat 80E	1000	140
Continental Drlg	8	d-e	2600	Idco E1700	1700	190
	9	d-e	2000	Idco ED1200	1200	160
	15	d-e	2000	Idco ED1200	1200	160
	35	d-e	2600	Idco E1700	1700	190
Culver Drlg	7	d-e	2000	G-D 1500	2000	250/ 5"
	8	dsl	1200	OIME SL7A	1200	180/ 5"
	9	dsl	1800	Nat 110	1800	180/ 5"
Dual Drlg	35	d-e	2000	C-E D3	1000	160
Grace/T R G Drlg	5	dsl	1245	Nat 75	1305	145
	10	d-e	3000	G-D 3000E	3000	300
	18	d-e	2200	G-D 1500E	2400	220
	23	dsl	1400	Nat 80B	1305	160
	141	d-e	2200	G-D 1500E	2400	220
Helmerich & Payne Intl Drlg	46	dsl	1100	C-E GB800	1210	150
	94	d-s	2000	Nat 110ME	1500	200
	98	d-s	2000	Nat 110ME	1500	200
Loffland Bros	34	d-e	3500	MC U1220	2500	280
	102	d-e	3300	MC U1220EBD	3300	280
	317	dsl	2250	G-D 1500	2500	240
Nowotny & Conley Drlg	6	d-e	3200	Nat 1320UE	3000	250
Parker Drlg	59	gas	1650	OIME 1500C	1650	200
	149	gas	1000	Nat 75	1000	160
	167	dsl	1650	OIME SL1500	1650	200
	182	dsl	3000	OIME Hercules 3000E	3000	300
	192	gas	1200	OIME 1000C	1200	160
	201	dsl	4800	OIME E4000	4000	500
	212	dsl	3200	OIME 2000	2000	250
Rowan Drlg US	7	dsl	3200	C-E A1500	2500	220
	18	dsl	3200	C-E A1500	2500	300
Santa Fe Drlg	SFW-15	d-e	1600	C-E C111	2000	300
Sharp Drlg	39	dsl	2331	Olwl M2000	2742	300
	40	dsl	1770	Olwl 96	2025	180
	58	dsl	2319	Olwl 96	2607	230
	71	d-e	2331	MC U914EC	2742	235
Tri-Land Drlg	1	dsl	1500	G-D 1500E	2000	210
Tri-Service Drlg	9	dsl	2475	Nat 1320M	2475	220
Trigg Drlg	8	dsl	1200	Nat 125	1600	200
U R C Drlg	4	d-e	1500	MC 914C	1500	220
	5	dsl	2250	MC 1220	2250	250
Unit Drlg & Expl	12	d-e	1350	G-D 1500	2000	250
BLAINE						
Cimarron Oper	3	dsl	1230	Idco H725	950	100
Cothrum Drlg	15					
FWA Drlg	5	dsl	1400	Wils Giant	850	115
ONEOK Drlg	9	dsl	1110	MC U15	700	130
Santa Fe Drlg	SFM 11	dsl	1900	G-D 800	1000	150
	SFM 12	dsl	2050	G-D 800	1000	150
	SFM 14	dsl	1450	BDW 800MI	800	150
	SFM 2	dsl	1400	Idco ED900	900	140
	SFM 4	dsl	1550	OIME SL1500	1500	180
	SFM 5	dsl	1200	OIME SD5	750	120
	SFM 6	dsl	1200	OIME SL7	900	160
	SFM 7	dsl	1200	OIME SD5	750	120
Trigg Drlg	2	g-b	700	Nat 75	900	120

OKLAHOMA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
BRYAN						
Helmerich & Payne Intl Drlg	89	d-s	2730	Nat 110UE	2730	200
Moran Drlg, E W	21	dsl	1600	Wils 120	1100	150
CADDO						
Apollo Drlg Inc	2	dsl	1500	Nat 80B	1500	160
Arden Drlg	1	d-e	1600	C-E D2	1200	160
	6	d-e	3200	C-E C3	3000	350
	12	d-e	2600	Nat 110UE	1500	220
Atco Drlg Southern	16	d-e	3200	Nat 110UE	1500	180
Basin Drlg	8	dsl	750	C-E D2M	820	130
	15	dsl	1000	MC U712AM	1200	170
Big Chief Drlg	46	d-s	3000	C-E Electrohoist III	4200	250
Brinkerhoff-Signal	15	dsl	2000	G-D 1500	2000	200
C E C Drlg	2	dsl	1100	MC U15	800	100
Cactus Drlg Co	33	dsl	2000	Nat 110	2550	200
Continental Drlg	34	d-e	3200	Idco E2100	2100	250
Dual Drlg	20	dsl	2250	Olwl 860	1400	220
	32	d-e	2800	Olwl 840	1500	220
Eason Oil	22	d-e	2600	C-E C1E	1500	210
Enopco	1	dsl	2600	Nat 110M	2700	200
	5	dsl	2000	Nat 80B	1800	180
	6	dsl	2600	Nat 110M	2700	200
FWA Drlg	19	dsl	1600	Wils Titan	1040	140
Grace/T R G Drlg	11	d-e	2000	G-D 1100E	2400	180
	130	d-e	2200	G-D 1100E	2400	180
	135	d-e	2200	G-D 1500E	2400	220
	136	d-e	2200	G-D 1500E	2400	220
	137	d-e	2200	G-D 1500E	2400	220
Mercury Drlg	7	dsl	2000	G-D 800M	2100	180
	10	dsl	2000	G-D 800	2100	180
Moran Drlg, E W	22	d-e	3200	C-E C3	3000	300
	25	d-e	3200	G-D 3000E	3200	400
	27	d-e	3200	G-D 1500E	2000	250
Nicor Drlg	10	dsl	2000	MC U914C	1500	180
	11	dsl	2300	MC U1220B	2000	210
	12	dsl	1170	G-D 700M	700	130
	30	dsl	2000	MC U914C	1500	180
	33	d-e	2000	MC U914EC	1500	210
	45	d-e	2700	MC U1220EB	2000	250
	47	dsl	2600	C-E C3E	2000	250
	49	d-e	3200	G-D 1500E	2000	250
	69	d-e	3200	MC U1220EB	2500	300
Noble Drlg	N-117	e-s	3645	Nat 110UE	3645	200
Parker Drlg	203	dsl	2600	OIME E2000	2000	250
	213	dsl	2200	OIME SL1500	2200	220
Pilgrim Drlg	3	d-e	2500	Idco Z100E	2500	250
Quarles Drlg	11	dsl	2700	MC U914C	2400	220
Ratliff Drlg	17	dsl	700	Nat 50A	700	120
Resource Drlg	9	dsl	2330	Nat 110	2740	180
Rowan Drlg US	30	dsl	2600	C-E A1500	2400	220
Santa Fe Drlg	SFM 3	dsl	1250	OIME 1000SL	900	140
Top Drlg	7	d-e	2000	Olwl 760E	1000	200
Tri-Service Drlg	10	dsl	1800	Olwl 860	1800	210
Triad Drlg	10	dsl		G-D 70C	1100	150
Unit Drlg & Expl	20	dsl	1000	G-D 700	1300	160
Viersen & Cochran Drlg	6	dsl	2000	Beth 1013	2400	250
CANADIAN						
American Western Energy Corp	16	gas	850	C-E 500	600	105
ACT Drlg	3	dsl	600	Wils 42	700	100
Basin Drlg	6	dsl	600	GD 700M	820	120
Beard Drlg (OK)	5	dsl	1379	C-E D2	1029	150
Bonray Drlg	3	dsl	900	S/B N7	900	105
Culver Drlg	5	dsl	800	G-D 800	800	160
	22	dsl	800	Coop 750	800	95/ 4"
Exeter Drlg	52	dsl	600	MC U36	600	105
	54	dsl	1000	Beth 1350	1100	180
FWA Drlg	7	dsl	1500	Wils Titan	1040	140
Loffland Bros	111	d-e	3300	C-E A1500	2200	240
Maratan Resources	2					
Mercury Drlg	15	dsl	2700	Nat T1320M	3225	250
Moran Bros	31	d-e	2900	Idco E2500	2500	250
	33	d-s	2300	Nat 110UE	1500	200
	35	d-e	1700	Olwl 76	1000	150
	36	d-s	2300	S/B N12	1500	200
Ratliff Drlg	8	g-b	1020	Nat 50A	1020	100
Sabre Drlg Div Grace Sabre	8	dsl	1385	MC U15	1050	90
Santa Fe Drlg	SFM 1	dsl	920	Nat 50A	450	110
Top Drlg	2	dsl	1200	Olwl 660	1200	140
U R C Drlg	3	dsl	860	MC U36A	860	125
	6	dsl	1600	Idco BIR7585		105
Unit Drlg & Expl	8	dsl	1000	Nat 55	1588	150
CARTER						
Dual Drlg	5	dsl	1200	Wils Mogul	800	95
Exeter Drlg	62	dsl	1000	Nat 110M	1100	170
Jones Drlg Corp	6	dsl	500		400	70
	8	gas	700		700	120
	9	gas	816		800	140
	18	dsl	600		600	80
Kingery Drlg	10	gas	300	Wils Giant	300	50
Little-Deutag	T-11	dsl	1700	Nat 80B	1000	154
Magic Circle Drlg	12	dsl	900	Nat 50A	900	120
Nicor Drlg	42	d-e	2000	MC U914EC	1500	210
Noble Drlg	N-133	e-s	3300	Nat 1320UE	1320	250

OKLAHOMA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
CHOCTAW						
Exeter Drlg	51	dsl	600	MC U36	600	105
Moran Drlg, E W	17	dsl	2000	Wils 250	2000	220
CIMARRON						
Gabbert-Jones	11	dsl	310	Nat 370	450	60
CLEVELAND						
Bonray Drlg	8	dsl	850	Coop 750	650	100
Johnson Bates Drlg	14	dsl	700	MC U15	450	75
ONEOK Drlg	5	dsl	1310	MC U15	900	105
Ratliff Drlg	10	gas	1020	Nat 50	1020	100
	16	dsl	750	MC U15	750	100
Top Drlg	6	dsl	350	Nat T32	350	75
COAL						
Bodard & Hale Drlg	7	dsl	550	Beth S55	600	80
	8	dsl	650	MC U36A	1100	135
Johnson Bates Drlg	3	dsl	1100	MC U34	1100	105
COMANCHE						
Bonray Drlg	9	d-e	3000	Olwl E2000	2000	250
Continental Drlg	4	d-e	3200	Idco E2100	2000	250
	7	d-e	3200	Idco E3000	3000	300
	10	d-e	3200	Idco E2100	2000	250
	13	d-e	2000	Idco ED1200	1200	160
Drillers	48	d-e	3600	Idco E3000	3000	300
Eason Oil	23	d-e	3200	C-E C3E	3000	300
JFP Well Serv	8	dsl	2000	Olwl E2000	2000	250
Loffland Bros	19	d-e	3200	C-E C3000	3300	350
	200	d-e	3300	C-E 3000 Type II	3300	500
Murco Drlg	42	d-s	2800	Olwl E2000	2000	250
Nicor Drlg	29	d-e	2700	G-D E1500	2000	250
	35	d-e	2000	MC U914EC	1500	210
	70	d-e	2700	G-D 1500E	2000	250
Ratliff Drlg	1	dsl	2640	Olwl 96	2640	240
	20	dsl	3600	UIZZOEB	2500	300
Resource Drlg	RD-21	dsl	2330	Nat 110	2740	180
	32	dsl	1040	Nat 610	1220	120
Rowan Drlg US	9	d-e	2600	Nat 1625DE	2000	250
Santa Fe Drlg	SFW-22	d-e	2600	Nat 110UE	1500	170
CREEK						
Hughes Drlg	5	dsl	550	Idco H35	400	62
Scott Drlg, Jerry	10	dsl	400	Crdw 450	450	60
Whitehead Drlg Contr	1	dsl	450	Wils Model 30	425	40
CUSTER						
Arden Drlg	13	dsl	1600	Idco H7-11	700	120
Big Chief Drlg	37	gas	1350	C-E J1250	1350	160
Bonray Drlg	4	dsl	900	MC U40	900	120
Continental Drlg	16	d-e	2000	Idco ED1200	1200	160
Cothrum Drlg	18					
Drillers	42	d-e	3000	C-E Electrohoist II	3000	250
Dual Drlg	33	d-e	2800	Olwl 840	1500	220
Eason Oil	18	d-e	2300	C-E C1E	1500	210
FWA Drlg	34	dsl	2200	Olwl 760	1560	150
Grace/T R G Drlg	1	dsl	1245	Nat 75	1305	145
Helmerich & Payne Intl Drlg	49	dsl	1650	Nat 110	1815	180
	95	d-s	1600	Nat 80UE	800	150
Lagersen Drlg	7	d-e	2000	C-E CIE	2500	220
Lanex Drlg	B-18	d-s	2700	G-D 1100E	1500	200
	B-20	d-s	2600	C-E EHII	2000	200
Loffland Bros	32	d-e	4000	C-E CE3000	3300	350
	196	d-e	3300	MC U1220	2200	280
	244	d-e	2500	MC U1220E	2200	280
Magic Circle Drlg	17	dsl	2460	Olwl 96	2460	200
Moran Drlg, E W	4	dsl	1600	Wils 120	1100	150
	5	dsl	1850	Wils 120	1100	180
	10	d-e	2600	G-D 1500	2000	250
	11	dsl	2600	Wils 150A	1650	200
Nicor Drlg	31	d-e	2000	MC U914EC	1500	210
	64	d-m	1750	C-E GB800	1000	150
ONEOK Drlg	8	dsl	1110	S/B N55	700	135
	12	d-e	2000	Olwl 840E	2000	200
Parker Drlg	205	dsl	2200	OIME 1500C	2200	220
	210	dsl	2200	OIME 1500C	2200	220
Pilgrim Drlg	4	d-e	2000	Olwl 840EHD	2000	220
Quarles Drlg	9	dsl	2000	OIME SD 7E	1000	220
Santa Fe Drlg	SFDLII-21	d-e	2600	Nat 110UE	1500	170
	SFM 15	dsl	1450	BDW 800MI	800	150
	SFW-17	d-e	1300	Nat 100	2000	140
Triad Drlg	7	dsl		G-D 800	1100	160
Unit Drlg & Expl	25	dsl	600	G-D 700	1300	160
	26	gas	600	Nat 75	600	150
Viersen & Cochran Drlg	15	dsl	1010	Olwl 660	830	130
	17	dsl	600	Olwl 660	830	120
Warrior Drlg	2	dsl	1600	S/B 75	1200	150
Wilson Bros Drlg	15	dsl	2600	Nat 110	2700	200
DEWEY						
Arden Drlg	7	dsl	1700	OIME SL7	1500	150
	14	dsl	1300	Nat SS	700	120
Beard Drlg (OK)	2	gas	1200	MC U15	800	120
Brinkerhoff-Signal	68	dsl	700	Nat 55	700	125
Cactus Drlg Co	3	dsl	1800	Nat 80B	1650	150
Eason Oil	12	dsl	2000	Nat 80B	1200	160
	25	d-e	2600	C-E C1E	1500	210
Exeter Drlg	58	dsl	800	Nat55	1000	120
Grace/T R G Drlg	2	dsl	825	G-D 500M	870	115
Helmerich & Payne Intl Drlg	55	dsl	1100	Nat 55	1210	140
	84	d-s	1700	Olwl 760E	760	160
Hickman Drlg	5	dsl	1450	BDW 800	1100	150
Lanex Drlg	A-12	d-s	1600	C-E D2	750	130
Loffland Bros	73	d-e	2160	MC U712A	2200	180
Mercury Drlg	1	dsl	2000	C-E GB800	1470	160
	2	dsl	1500	MC U15	950	120
ONEOK Drlg	1	d-m	1150	MC U15	800	130
Quarles Drlg	4	gas	1400	C-E GB 500	500	120
	8	dsl	2000	OIME SD 7E	1000	220
Rine Drlg	5	dsl	700	S/B N55	700	90
Schlensker Drlg	10	gas	900	G-D 800M	1350	160
Triad Drlg	6	dsl		S/B N95A	1650	200
Unit Drlg & Expl	22	gas	495	Nat 50	600	100
	24	dsl	600	G-D 800	1200	150
Viersen & Cochran Drlg	2	dsl	600	Nat 55	800	120
Warrior Drlg	5	dsl	2000	BDW	1200	150
ELLIS						
Forex Neptune and/or Affil	48	d-e	3200	G-D 1100E	1500	180
Gabbert-Jones	3	dsl	410	C-E 350	475	80
Grace/T R G Drlg	15	dsl	1245	Nat 75CA	1305	150
Nicor Drlg	63	dsl	2650	Olwl 96	1500	180
Robinson Bros Drlg	21	dsl	1500	BDW 650M	1300	140
Santa Fe Drlg	SFM 9	dsl	1600	BDW 800MX	800	160
Top Drlg	4	dsl	1200	Olwl 660	1200	140
Unit Drlg & Expl	11	dsl	1100	G-D 700	1300	150
Zenith Drlg	9	dsl	1200	G-D 800	1200	170
GARFIELD						
Arden Drlg	2	dsl	800	C-E WS1	800	120
Hughes Drlg	1	dsl	550	Idco H35	475	80
	2	dsl	550	Idco H35	475	80
	3	dsl	1100	Idco 725	900	130
	4	dsl	600	Idco H44	700	90
	16	dsl	650	Speedstar SS40	375	40
	17	dsl	650	Speedstar SS40	375	40
Iron Drlg	1	dsl	500	MC U35A	450	70
Logan Drlg	4	dsl	1200	BDW 650	900	100
Mendenhall Drlg	2	dsl	450	Beth S45E	600	80
Nicor Drlg	7	dsl	1350	MC U15	700	115
	8	dsl	755	Nat 50CA	425	110
	14	dsl	1300	G-D 500M	650	100
	19	dsl	1650	Idco 750	750	150
Sabre Drlg Div Grace Sabre	4	dsl	600	Nat 370	525	75
	153	dsl	450	MC U34	450	60
Thomas Drlg	2	dsl	300	Nat T32	300	73
	8	dsl	300	Idco H35	300	75
GARVIN						
Ardmore Drlg	4	gas	600	Wils	400	500
Bodard & Hale Drlg	12	dsl	450	MAC 400	525	75
Cactus Drlg Co	56	dsl	800	S/B N55	850	90
Drillers	30	dsl	800	Unit U15M	1000	110
Exeter Drlg	63	dsl	450	Coop 750	600	80
Helmerich & Payne Intl Drlg	8	dsl	1100	Nat 55	1210	140
Johnson Bates Drlg	9	dsl	700	Beth S50	450	75
Leeman Drlg	1	dsl	500	Coop 550	525	80
Noble Drlg	N-83	dsl	1530	Nat 80B	1530	150
	N-87	dsl	1200	Nat 80B	1200	150
R W I T Drlg	9	g-l	610	Wils	280	60
Resource Drlg	RD-28	dsl	1040	Nat 610	1220	120
Scott Drlg, Jerry	6	dsl	1342	MC U15	1342	105
Top Drlg	5	dsl	1000	MC U15	1000	100
GRADY						
Arden Drlg	3	dsl	2500	C-E C1	1500	200
Big Chief Drlg	41	gas	1400	S/B N75	900	120
	42	dsl	1800	Nat 80	1800	150
	43	dsl	2000	Nat 80B	2250	160
	47	d-s	4000	G-D 3000E	3000	350
	48	d-s	4000	G-D 3000E	3000	350
Bonray Drlg	22	dsl	800	Idco H525	800	105
Cactus Drlg Co	35	d-e	3220	Nat 110UE	2000	200
Cothrum Drlg	19					
Dual Drlg	1	dsl	1000	Wils 75P	900	125
	4	dsl	2000	Nat 110	1500	190
	15	dsl	2700	Wils 150A	1650	190
Exeter Drlg	44	dsl	1000	G-D 800M	1100	150
	48	dsl	900	S/B N75	900	140
	55	dsl	900	Beth 800	900	150
	61	dsl	1000	Nat 80B	1100	170
GRADY (Cont'd)						
Forex Neptune and/or Affil	50	d-e	3200	G-D 1500E	2000	217
Grace/T R G Drlg	133	d-e	2000	G-D 1100E	2400	180
	134	d-e	2200	G-D 1500E	2400	220
Imperial Drlg	1	dsl		MC Unit 914C		200
	2	dsl		G-D PZ9	BDW 800	180
Loffland Bros	18	d-e	2600	MC U1220EB	2200	280
	99	gas	1300	MC U20	1300	150
	206	g-e	2160	MC U914B	2200	200
Magic Circle Drlg	16	gas	1300	Beth M810	1300	160
Mercury Drlg	8	dsl	2000	G-D M700	1400	170
Noble Drlg	N-115	dsl	2130	Nat 110	2130	200
	OW-23	e-s	3750	Olwl E2000	2000	250
Parker Drlg	172	dsl	1650	OIME SL1500P	1650	200
	179	dsl	3000	OIME Hercules 3000E	3000	300
	186	dsl	2200	OIME 1500C	2200	220
	196	dsl	3200	OIME E3000	3000	350
Quarles Drlg	7	dsl	1050	Nat 750A	800	140
Ratliff Drlg	14	dsl	2640	MC U1220B	2640	280
Resource Drlg	RD-29	dsl	1560	Nat 80B	1835	140
Santa Fe Drlg	SFM 8	dsl	2700	OIME SD7E	900	200
	95	d-e	2800	Olwl E2000	1500	200
Thomas Drlg	6	gas	600	Nat 50A	600	130
	9	dsl	640	S/B N46	640	130
Unit Drlg & Expl	10	dsl	1000	Beth M58	1300	155
	23	dsl	600	MC U15	600	100
Viersen & Cochran Drlg	18	dsl	1000	Nat		
Warrior Drlg	3	dsl	1800	Nat 100	1800	170
GRANT						
American Western Energy Corp	14	gas	850	C-E 500	600	105
Astro Drlg	17	dsl	1050	Cbot 750	700	110
Exeter Drlg	49	dsl	600	Nat 50	600	105
Leben Drlg	11	dsl	500	G-D 3000	500	70
Mendenhall Drlg	1	dsl	450	Fail 90	318	50
Vaughn Good Drlg	1	dsl	500	Coop 600	500	90
	2	dsl	1100	Coop 650	600	120
HARPER						
Beredco	1	dsl	800	MC U15	800	90
Challenger Drlg	3	dsl	700	Nat 50A	750	100
Hickman Drlg	2	dsl	1150	BDW 650	800	120
Rine Drlg	3	dsl	750	S/B N55	750	95
Robinson Bros Drlg	19	dsl	600	Olwl 52T	3000	80
Triad Drlg	2	dsl		S/B N45	550	90
HASKELL						
Astro Drlg	23	dsl	1050	Cbot 2550	1040	150
Dual Drlg	2	dsl	1250	Wils Giant	650	95
Moran Drlg, E W	16	dsl	920	S-H 7000	450	95
HUGHES						
R W I T Drlg	2	g-l	690	MC U34	280	60
JACKSON						
Luke Grace Drlg	2	dsl	500	MC U15	750	105
Moran Drlg, E W	26	dsl	1000	CEI 75D	750	110
Vi-Roi Drlg	1	dsl	435	Wils Mogul 42	435	65
JEFFERSON						
Drillers	26	dsl	700	C-E GB500	700	100
Jones Drlg Corp	7	gas	700		750	120
	14	dsl	1200		1200	140
	15	dsl	900		1000	140
Moran Drlg, E W	15	dsl	950	Beth S55	550	100
Nicor Drlg	5	dsl	1200	Beth C50	450	100
Pilgrim Drlg	1	dsl	800	Idco H35	600	120
	2	dsl	1500	Olwl 76	1500	160
	5	dsl	775	Nat 50CA	950	120
Roberson Drlg	1	gas	600	C-E	400	70
	3	gas	700	MC U15	600	100
KAY						
Hughes Drlg	6	dsl	550	Idco H35	400	62
Kay Drlg	1	dsl	480	S/B N4	480	60
Sabre Drlg Div Grace Sabre	6	dsl	450	Nat T20	335	60
KINGFISHER						
American Western Energy Corp	12	gas	950	C-E 500	600	105
Astro Drlg	15	dsl	912	Wils Super Giant	912	105
	18	dsl	556	Idco H1000	940	120
	21	dsl	2500	Nat 100	1500	180
	28	d-e-s	2000	I-R 2550	1500	160
Beard Drlg (OK)	1	gas	675	C-E G450	450	100
	4	dsl	1379	MC U10	1029	140
Magic Circle Drlg	15	dsl	900	MC U15	900	120
Thomas Drlg	5	dsl	425	Wils Giant	400	89
Top Drlg	1	dsl	650	S/B N7	900	100

OKLAHOMA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
KIOWA						
Moran Drlg, E W	30	d-e	3200	G-D 1500E	2000	300
Unit Drlg & Expl	27	dsl	1600	G-D 1500	2400	250
LATIMER						
Arden Drlg	4	dsl	1800	C-E D2	1000	160
Cactus Drlg Co	29	dsl	2000	Nat 110	2550	200
Dual Drlg	18	dsl	1500	Beth M-810	1000	150
Exeter Drlg	46	dsl	900	S/B N75	900	140
Grace Miller Drlg	117	dsl	1000	OIME SL7	1500	200
Grace/T R G Drlg	19	d-e	2200	G-D 1500E	2400	220
Lanex Drlg	A-15	d-s	2000	C-E D3	1000	160
	B-12	d-s	1600	C-E D2	750	130
Moran Drlg, E W	14	dsl	1600	Wils 150	1650	150
Quarles Drlg	1	dsl	1500	OIME 750	750	145
Unit Drlg & Expl	17	dsl	700	S/B N75	1300	150
	29	dsl	1000	S/B N75	1200	160
LEFLORE						
Arden Drlg	15	dsl	2000	OIME SL7	1000	160
LINCOLN						
Bodard & Hale Drlg	5	dsl	450	MC U34	425	65
LOGAN						
Basin Drlg	1	dsl	600	G-D 500M	820	100
	2	dsl	600	G-D 500M	820	110
	3	dsl	500	G-D 500M	820	100
	4	dsl	1600	G-D 700M	820	140
	9	dsl	600	G-D 500M	820	100
	10	dsl	600	G-D 500M	820	100
	13	dsl	1470	G-D 700M	1220	140
	14	dsl	1470	G-D 700M	1220	140
Exeter Drlg	60	dsl	600	Nat 50	600	90
Grace Miller Drlg	108	gas	450	MC U15	450	80
	122	dsl		BDW 800		150
Hughes Drlg	7	dsl	550	Idco H37	475	80
	15	dsl	550	Cbot 550	475	80
Porter Drlg, Gene	1	dsl	600	MC U34	435	60
Sabre Drlg Div Grace Sabre	9	dsl	450	MC U34	430	60
Scott Drlg, Jerry	7	dsl	350	Crdw L350	600	80
	8	dsl	1520	MC U15	1000	110
Sloan Drlg	18	dsl	450	Wils 42	450	70
Smith Bros Drlg	7	dsl	450	Cbot 5000	450	50
	8	dsl	725	RMI 800	800	100
	9	dsl	1200	Wils 75	950	125
LOVE						
Ardmore Drlg	2	gas	700	Wils Giant	700	90
	3	gas	1350	Idco M10000	1350	125
	5			Idco		165
Big Chief Drlg	12	gas	1600	Nat 80B	1600	140
Burns L D Drlg	1	dsl	1360	Sea Coast 10004S	780	140
Grace/T R G Drlg	75	d-e	2200	Nat 1320UE	2400	220
U R C Drlg	2	dsl	1100	Nat 100	1100	150
McCLAIN						
Culver Drlg	2	dsl	700	Nat 50A	700	120
Drillers	27	dsl	700	C-E GB500	750	100
	39	d-e	1200	Idco 700E	1000	140
Exeter Drlg	47	dsl	600	MC U36	600	105
	50	dsl	900	S/B N75	900	140
Johnson Bates Drlg	8	dsl	1000	Wils Giant	1050	120
	15	dsl	1350	Wils Titan	1575	140
Moran Drlg, E W	7	dsl	1600	G-D 700	800	130
ONEOK Drlg	10	dsl	3000	Nat 110M	1500	200
Sabre Drlg Div Grace Sabre	7	dsl	1050	MC U15	450	75
Sloan Drlg	14	dsl	370	Nat T20	500	65
Triad Drlg	5	dsl		Idco Super 750	1100	140
Trigg Drlg	4	dsl	700	Nat 75	950	120
	5	g-b	500	Nat 50A	800	100
Viersen & Cochran Drlg	4	dsl	600	Nat 55	800	120
MAJOR						
Bonray Drlg	6	dsl	700	Nat 50A	700	90
Cimarron Oper	1	dsl	750	Idco BIR5525	450	65
	2	dsl	1230	Idco H725	950	100
	5	dsl	1230	Idco DIR7015	608	85
Exeter Drlg	59	dsl	600	Nat 50	600	105
Hickman Drlg	6	dsl	1450	BDW 800	1100	150
Rine Drlg	7	dsl	750	G-D 700	750	135
Top Drlg	3	dsl	400	Olwl 500	450	85
U R C Drlg	1	dsl	860	Nat 50	860	100
Viersen & Cochran Drlg	22	dsl	1245	Nat 610	1245	120
MURRAY						
Compadre Drlg & Expl	1	dsl	360	W-N A25040	360	60
Noble Drlg	N-85	dsl	1830	Nat 80B	1830	150
NOBLE						
Bodard & Hale Drlg	4	dsl	450	MC U34	400	65
Bonray Drlg	7	dsl	476	Coop 66	318	60
Hughes Drlg	9	dsl	550	Cbot 550	475	80
McLennan Drlg	3	dsl	450	Cbot 658	318	45
Sumpter & Barker Drlg	1	dsl	930	Wils Mogul 42	430	65
NOWATA						
Winter Drlg & Expl	1	dsl	900	Jaswell J2400	900	24
OKFUSKEE						
Scott Drlg, Jerry	5	dsl	375	Beth S45	375	60
OKLAHOMA						
Basin Drlg	7	dsl	850	MC U36A-M	820	80
	16	dsl	1350	MC U914CM	1400	220
	17	dsl	1350	MC U914CM	1400	220
Big Chief Drlg	30	gas	1515	Idco 1050	1515	150
Bigard Drlg, James	11	d-e	2000	Idco ED1200	2000	200
	18	d-e	2000	Idco ED1200	2000	200
C E C Drlg	5	dsl	2400	G-D 800	1600	180
	6	dsl	2400	G-D 800	1600	180
Cliffs Drlg	38	d-e	2800	Olwl 840E	3300	180
Drillers	21	dsl	300	C-E GB350	450	60
	40	d-e	2100	G-D 1100E	2100	220
Eason Oil	17	dsl	2300	C-E C1	1500	210
	19	dsl	1800	C-E D2	750	130
	20	d-e	2000	C-E D3	1000	160
	21	d-e	2000	C-E D2	750	130
	24	d-e	2600	C-E C1E	1500	210
Falcon Drlg	1	dsl	600	Beth S45A	400	70
Johnson Bates Drlg	2	gas	325	MC U34	245	65
	5	dsl	1000	MC U15	1100	100
Lanex Drlg	C-9	d-s	1600	BDW 650	650	120
Mercury Drlg	3	dsl	2000	Olwl 96	2100	220
	5	dsl	2700	G-D 1100	3225	220
	6	dsl	1500	C-E 500	1425	140
	12	dsl	2000	G-D 800	2100	200
	14	dsl	2000	MC U914	2100	220
Nicor Drlg	1	dsl	1700	MC U20	1200	150
	3	dsl	785	MC U15	700	115
	28	dsl	1000	MC U15	700	115
	54	d-m	400	Idco H35CKD	400	43
	65	d-e	2700	MC U914EC	1500	210
	71	d-e	2000	MC U914EC	1500	210
Parker Drlg	43	gas	1800	Olwl 96	1800	200
	47	gas	1400	OIME 1500C	1400	200
	54	gas	1800	Nat 130	1800	250
	71	gas	1600	Nat 125	1600	200
	114	d-e	2700	Idco 3000E	3000	300
	142	dsl	2600	Nat 1320E	3000	250
	164	dsl	1650	OIME SL1500P	1650	200
	178	dsl	2200	OIME SL1500P	2200	220
	181	dsl	3000	OIME Hercules 3000E	3000	300
	204	dsl	2200	OIME E1500C	2200	220
	208	gas	2200	Idco 711	2200	180
	217	dsl	3200	OIME E2000	2000	250
Plotner Drlg	2	dsl	1000		2000	200
Ratliff Drlg	7	g-b	1020	Nat 75CB	1020	150
	11	dsl	850	S/B N7	850	100
	12	dsl	700	G-D 500M	700	120
S & T Drlg	8					
	11					
Sandia Drlg	1	dsl	3000	G-D E800	3000	180
	2	dsl	4000	C-E C1	4000	220
	3	dsl	3000	C-E D3	3000	180
	4	dsl	4000	C-E C1	4000	220
	5	dsl	2000	C-E D2	2000	160
Santa Fe Drlg	SFDLI-20	d-e	3400	Olwl E2000	2000	250
	SFW-7	d-e	2600	C-E C3111	3000	300
Schlensker Drlg	11	dsl	2400	G-D 1100M	2400	200
Seneca Drlg	1	d-e	800	MC U36EA	800	140
	2	d-e	800	MC U36EA	800	140
	3	d-e	800	MC U36EA	800	140
Tierra Drlg	18	d-e	800	BDW 650	650	120
TWT Expl	54	dsl				100
Unit Drlg & Expl	2	dsl	700	MC U15	800	125
Viersen & Cochran Drlg	10	dsl	2000	Nat 100	1040	170
	12	gas	500	Nat 50	800	90
Warrior Drlg	1	dsl		C-E	400	50
Wilson Bros Drlg	1	d-e	2600	Idco E2100	2100	210
	14	dsl	2600	Nat 110	2700	200
	16	dsl	2600	Nat 1320	2700	300
	22	d-e	2800	Olwl E2000	2000	250
OSAGE						
Equity Drlg	150	dsl	300	Fail 2500	300	30/ 3.5"
McLennan Drlg	4	dsl	318	G-D	238	20
	5	dsl	450	Cbot 658	318	40
Winter Drlg & Expl	4	dsl				
PAYNE						
Arden Drlg	21	dsl	300	Coop M21	300	50
Bodard & Hale Drlg	6	dsl	600	Nat T20	450	65
Johnson Bates Drlg	4	dsl	400	MC U34	375	65
Venture Drlg	1	dsl	550	Cbot 750	750	75
PITTSBURG						
Alexander Drlg	2	dsl	1200	C-E G42	800	125
	3	dsl	1000	C-E J1100	1200	150
Cactus Drlg Co	51	dsl	700	S/B N55	850	90
Dual Drlg	10	dsl	1250	Wils 120	1100	150
FWA Drlg	10	dsl	1150	Wils Giant	720	115
Grace Miller Drlg	102	gas	675	MC U15	675	120
New Prospect Drlg	2	dsl	1000	S/B N75	1100	160
R W I T Drlg	8	g-l	601	MC U34	280	60
Unit Drlg & Expl	5	dsl	600	MC U15	800	120
PONTOTOC						
American Western Energy Corp	10	dsl	1050	Cbot 750	700	80
Baulch Drlg	1	dsl	350	S/B N4	275	48
Bodard & Hale Drlg	9	dsl	550	Beth S55	700	90
Cactus Drlg Co	57	dsl	550	Idco H35	450	65
Royal Drlg	1	dsl	300	C-E GB160	675	42
T E K Drlg	F1500	gas	350	Fail 1500	350	15
	WS	dsl	265	Wils Super	265	45
POTTAWATOMIE						
Bodard & Hale Drlg	10	dsl	450	Olwl 52T	600	90
	11	dsl	450	MAC 300	450	65
	14	dsl	450	S/B N4	450	65
	15	dsl	450	MAC 400	525	75
	16	dsl	450	Idco H37	450	65
Challenger Drlg	26	dsl	30	Nat T20	600	50
Johnson Bates Drlg	1	gas	350	MC U34	300	57
Rockwell Drlg	18	dsl	670	MC U34	450	50
Scott Drlg, Jerry	2	dsl	420	MC U34	430	65
Sloan Drlg	12	dsl	370	S/B N4	475	65
ROGER MILLS						
Arden Drlg	5	d-e	2400	C-E D3	2000	180
	9	d-e	2000	C-E D2	1000	140
Bonray Drlg	5	gas	700	Nat 50A	700	90
Challenger Drlg	32	dsl	2400	Nat 1320	2400	200
	37	dsl	2400	Idco 2500	2400	280
Continental Drlg	1	d-e	3200	Idco E2100	2000	250
Forex Neptune and/or Affil	52	d-e	3200	G-D 1500E	2000	217
Grace/T R G Drlg	16	d-e	1500	G-D 800	1800	160
	17	d-e	2200	G-D 1500E	2400	220
	132	d-e	3000	G-D 3000E	3000	300
Helmerich & Payne Intl Drlg	44	dsl	1650	Nat 110	1815	220
	82	d-s	2800	Olwl E2000	2000	280
	92	d-s	2000	Nat 110ME	1500	200
	93	dsl	1600	Nat 80B	800	150
	97	d-s	3400	Olwl E2000	2000	260
Loffland Bros	123	gas	1975	Nat 130	2200	260
	218	d-e	3300	MC U1220E	2200	280
	311	dsl	2250	G-D 1500	2500	240
Moran Drlg, E W	2	dsl	1500	G-D 700	800	150
Nicor Drlg	55	d-e	2000	MC U914EC	1500	210
Noble Drlg	OW-841	e-s	2775	Olwl 840E	1400	200
ONEOK Drlg	7	d-e	1466	G-D 800E	1000	170
Parker Drlg	218	gas	1400	OIME 1000C	1400	180
Quarles Drlg	3	dsl	2000	OIME 1000	1000	180
Rowan Drlg US	14	dsl	3200	Nat 1625M	3000	350
	31	dsl	3200	Nat 1625	3300	300
Slawson Drlg	8	dsl	750	Idco H725	750	145
	9	dsl	1400	Idco H900	950	165
Tri-Service Drlg	12	d-s	3300	Olwl E2000	2000	250
Triad Drlg	8	dsl	2250	G-D 1500	2250	240
Viersen & Cochran Drlg	1	dsl	800	Olwl 660	800	120
	3	dsl	800	Nat 75CA	800	140
	5	dsl	600	Olwl 660	800	120
	21	dsl	1500	Nat 80B	1500	185
Wilson Bros Drlg	17	dsl	2600	Nat 110	2700	200
	18	dsl	1300	Nat 110	3300	200
SEMINOLE						
Hughes Drlg	10	dsl	550	Cbot 550	475	80
Johnson Bates Drlg	7	dsl	1000	Wils Titan	1350	120
Rockwell Drlg	24	dsl	450	MAC 300	450	50
Scott Drlg, Jerry	4	dsl	600	Beth C50	640	100
Sloan Drlg	10	dsl	370	MC U34	475	65
	16	dsl	400	Wils 42	600	70
	20	d-e	1000	Wils 90EH	1000	140
STEPHENS						
Adeco Drlg & Engr	17		690	OIME SL750	1035	140
Arden Drlg	10	d-e	2000	C-E D3	1200	160
Ardmore Drlg	1	dsl	450	Idco H30-D	450	50
Basin Drlg	5	dsl	900	C-E D2-M	820	130
Bonray Drlg	1	dsl	1230	Olwl 760	1230	160

OKLAHOMA (Cont'd)

STEPHENS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Challenger Drig	23	dsl	1800	G-D 11100	2700	180
Grace/T R G Drig	14	d-e	2000	G-D 1100E	2400	180
Jones Drig Corp	2	dsl	385		385	50
	5	gas	400	Beth S45	400	70
	10	dsl	2000		2000	200
	11	dsl	600		600	100
	16	dsl	850		1400	160
Lanex Drig	B-15	d-s	2000	C-E D3	1000	160
Little-Deutag	T-2	dsl	1300	Idco H525D	670	85
	T-37	dsl	1600	Coop LTO750	750	100
Loffland Bros	104	d-e	3300	C-E 3000	3300	350
Nicor Drig	2	dsl	1500	MC U15	700	120
Ratliff Drig	9	gas	700	Nat 50A	1020	110
Thomas Drig	1	dsl		S/B N42		110
	11	dsl	300	Wich R-6	300	60
Vi-Roi Drig	2	dsl	120	HT 100	210	30

TEXAS

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Damac Drig	6	dsl	550	Cbot BIR550	450	65
Robinson Bros Drig	17	dsl	600	G-D 500	650	90
Service Drig (TX)	2	dsl	450	MC U34	450	60
Triad Drig	1	dsl		Nat T32	475	80

TILLMAN

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Little-Deutag	T-12	dsl	1300	Idco H525D	670	85

TULSA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Winter Drig & Expl	2	dsl	900	Jaswell J2400	900	24

WASHINGTON

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Equity Drig	175	dsl	300	Wils Super 38	300	42

WASHITA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Bonray Drig	2	dsl	1650	Olwl 860	1650	200
	20	dsl	1680	Idco Super 711	1680	170
	30	dsl	2400	Nat 1320	2400	250
	31	dsl	2400	Nat 1320	2400	250
	32	dsl	1600	Nat 110	1600	200
Cactus Drig Co	6	dsl	1300	Idco 711	1100	140
Challenger Drig	6-E	dsl	900	Nat 80E	1000	140
Continental Drig	32	d-e	2600	Idco E1700	1700	190
Drillers	10	dsl	1600	Nat 100M	1600	180
	44	d-e	2000	G-D 2000	2000	250
Haning & Young Drig	151	d-e	2000	S/B NE95	1700	180
Helmerich & Payne Intl Drig	48	dsl	1640	Nat 110	1820	220
	78	d-s	2000	Nat 110UE	1500	200
	80	d-s	2200	Nat 110UE	1500	200
	96	d-s	1600	Nat 80UE	800	150
	99	d-s	3400	Olwl E2000	2000	260
Lagersen Drig	8	d-e	2000	C-E CIE	2500	220
Lanex Drig	B-16	d-s	2000	G-D 800E	1000	160
Loffland Bros	227	dsl	2400	MC U914A	2500	220
	324	dsl	2250	G-D 1500	2500	240
	327	dsl	2250	G-D 1500	2500	240
Magic Circle Drig	18	d-e	4000	C-E C2	2000	250
Moran Drig, E W	9	dsl	2600	Wils 150	1500	180
	28	d-e	3200	G-D 3000E	3000	400
Murco Drig	50	d-s	2200	Olwl 860E	2000	180
	54	d-s		G-D 1100E		180
Noble Drig	GD2	dsl	3135	G-D 2100	3135	250
ONEOK Drig	11	d-e	2000	Nat 110UE	2000	200
Parker Drig	170	dsl	1650	OIME SL1500P	1650	200
	214	gas	2200	OIME 1500C	2200	220
Quarles Drig	12	dsl	2700	MC U914C	2400	220
Ratliff Drig	5	dsl	1100	Nat 75CS	1100	150
	30	dsl	1650	Texas Flange	1650	180
Resource Drig	RD-27	dsl	1560	Nat 80B	1835	140
Rowan Drig US	5	dsl	3200	Nat 1625M	3000	350
Trigg Drig	9	d-e	2700	Beth 1350MX		220
Unit Drig & Expl	21	dsl	1000	G-D 700	1300	160
	28	d-e	1600	G-D 1500E	2000	250
	30	dsl	2350	Beth 1350M	1800	200
Warrior Drig	4	dsl	1800	BDW	1000	170

WOODS

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Damac Drig	2	dsl	310	Wils Giant	310	66
Magic Circle Drig	11	dsl	900	Nat 50A	900	100
	14	dsl	320	Cbot 2042	700	95
Rine Drig	8	dsl	700	S/B N55	700	85
Sage Drig	8	dsl	900	BDW 650	800	120

WOODWARD

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Continental Drig	12	d-e	2000	Idco ED1200	1200	160
Drillers	11	d-h	1500	Automatic H2000	2000	120
	36	dsl	600	C-E GB350	700	85
Exeter Drig	53	dsl	600	C-E GC450	600	105
Hickman Drig	3	dsl	1200	BDW 650	800	120
ONEOK Drig	6	dsl	1110	MC U15	700	110
Search Drig	1	dsl	640	Nat T32	640	60
	2	dsl	950	Idco H725C	950	100
	3	dsl	956	Idco H725C	950	100
	4	d-e	2700	G-D 1500E	3000	240
	6	d-e	2000		1000	140

OKLAHOMA (Cont'd)

WOODWARD (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Triad Drig	3	dsl		S/B N55	800	120
Unit Drig & Expl	9	dsl	600	S/B N55	1050	120
	14	dsl	1000	G-D 700	1300	160
Viersen & Cochran Drig	20	dsl	1245	Nat 610	1245	130

OREGON

DOUGLAS

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Taylor Drig	5	dsl	750	MC U34	375	60

PENNSYLVANIA

UNDESIGNATED

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
International Petr Serv	3	dsl	350	CPT750DH	285	45

ARMSTRONG

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Delta Drig	79	dsl	255	Idco H35KD	291	60

CLEARFIELD

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Fairman Drig	5	dsl	400	Crdw	350	40
	6	dsl	350	Idco H44	550	80
	7	dsl	350	Idco H44	550	80
	8	dsl	350	Idco H44	550	80
	9	dsl	400	Idco H44	500	80
	15	dsl	300	Idco	300	50

ERIE

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Union Drig	2	dsl	1200	Idco BIR5525	425	60
	7	dsl	1200	Cbot 500	425	65
	8	dsl	1200	Idco BIRH37	425	65
	10	dsl	1200	Idco BIR5535	425	75
	11	dsl	1200	S-H 5000	350	50
	12	dsl	1200	Cbot 500	425	65
	13	dsl	1200	Idco BIR5525	425	60
	14	dsl	1200	Crdw KB250	425	65

INDIANA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Delta Drig	72	dsl	250	S-H 7000	440	90
	77	dsl	250	Idco H35KD	291	60
	78	dsl	250	Idco H35KD	291	60
	84	dsl	1800	C-E D3 Type III	1560	160
	92	dsl	255	Idco H35KD	291	60
Fairman Drig	10	dsl	400	Wils Mogul 42	350	50
	12	dsl	400	Idco	250	50
	14	dsl	400	S/B	350	75

JEFFERSON

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Delta Drig	91	dsl	255	Idco H35KD	291	60
Fairman Drig	11	dsl	400	Idco H44	500	80

MERCER

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
P E P Drig	5	dsl	550	G-D 500M	500	70
	8	dsl	550	G-D 500	500	100

POTTER

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Delta Drig	67	dsl		S-H 7000	480	90

SOMERSET

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Delta Drig	71	dsl	1000	S-H 7000	440	90

WARREN

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
International Petr Serv	5	dsl	475	Wils 42	475	75

SOUTH DAKOTA

HARDING

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Cardinal Drig	9	dsl	1120	Nat 50CA	720	115
	15	dsl	1060	C-E GA500	760	100
Elenburg Expl	3	dsl	320	W-N CC2000	230	25

TENNESSEE

CLAIBORNE

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Union Drig	6	dsl	1200	S/B DH4210	425	80

CUMBERLAND

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Delta Drig	83	dsl	2600	C-E C1 Type III	2331	180

FENTRESS

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Norman Drig, James R	1	dsl	750	I-R	450	25
	2	dsl	750	I-R	450	25

SCOTT

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Miller Contract Drig	18	dsl		I-R T4	600	35

TEXAS

UNDESIGNATED

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Ard Drig	2	dsl	1986	MC U20	1800	180
	3	dsl	1400	MC U40	1200	150
	8	dsl	1900	C-E 800GB	1800	160
Blocker Drig-Alice	2	dsl	1130	Cbot 750	650	95
	3	dsl	1820	Cbot Expl III	950	120
	4	dsl	1800	Nat 55	1500	120
	6	dsl	1500	Cbot HT Expl	950	100
	8	dsl	1820	Cbot Expl III	1400	140
	14	dsl	2500	Nat 110	2730	200
	16	dsl	1080	Cbot Expl III	950	120
Blocker Drig-Houston	45					200
	46					200
Butler-Johnson	9	dsl	1200	G-D 700	1200	120
Cliffs Drig	42	d-e	2600	Nat 1320UE	3025	250
Cothrum Drig	2	dsl	926	MC U15A	912	115
	5	dsl	1525	BDW 650	912	140
	6	dsl	750	C-E G500	600	75
	11	dsl	250	G-D 210B	250	100
	14					
	16					
	17					
Diamond M Land Drig	170	dsl	1750	Wils Mod 90	1605	125
Faulk Drig	4	dsl	450	S/B N4	450	60
Gibson Drig	6	dsl	506	Wils Mogul 42	318	50
Grace France Drig	8	dsl	2400	Olwl 760E	2400	170
Hinton Drig, W B	3	dsl	1700	Nat 80B	1650	150
Mesa Drillers	1	dsl	600	Nat 50A	750	80
NL Well Serv	268	dsl	300	Cbot 1287	456	50
Penrod Drig	16	dsl	3075	S/B N12A	1840	200
	18	dsl	2250	Nat 1625M6	2200	100
	22	dsl	2600	Nat 1320N	1950	250
	25	dsl	2600	C-E C2	1950	250
	107	dsl	1000	Nat 80B	1760	150
	111	dsl	1950	Nat 1625M	3000	300
	114	dsl	1600	Nat 1625M	3000	300
	116	dsl	1300	Nat 1320M	2000	250
	117	dsl	1300	Nat 1625M	2000	250
	119	dsl	1600	Nat 1625M	3000	300
	121	dsl	1600	Nat	3000	300
	124	dsl	1600	Nat 1625M	3000	300
	125	dsl	1000	Nat 80B	1760	150
	128	dsl	1000	Nat 80B	1760	150
	133	dsl	1600	Nat 1625DE	4610	200
Phelps Drig	21	dsl	770	C-E 370M	550	100
Sharp Drig	47	dsl	790	Beth M58	988	135
Sloan Drig	22	dsl	1000		1000	75
Sterling Drig (TX)	1	dsl	900	Nat 50A	900	120
	5	dsl	1230	Nat 50CA	820	110
	7	dsl	850	Nat 50A	900	120
	12	dsl	1500	Nat 610	1100	130
	15	dsl	1400	S/B N75	1100	140
Verna Corp	12	dsl	500	MC U15	600	115
	19	dsl	550	MC U15	800	115
	26	dsl	500	Idco H40	750	80
Wes-Mor Drig	8	g-b		MC U15		65
	12	dsl	2500	MC U15	2500	90
Wes-Tex Drig	22					

ANDERSON

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
FWA Drig	33	dsl	1750	G-D 700M	1040	120
Henley Drig	1	dsl	1725	OIME SL1000	1725	140
Nowotny & Conley Drig	3	dsl	1800	S/B N46	900	125
Schlensker Drig	5	dsl	950	MC U15	950	100
Thunderbolt Drig	50	dsl	1750	Cbot 1200	1300	135

ANDREWS

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
BJM Drig & Expl	6	dsl	1200	MC U15	1000	120
Cactus Drig Co	22	dsl	1450	Nat100	1650	150
	61	dsl	550	Nat T20	460	60
	66	dsl	500	S/B N4	454	60
Johnn Drig	10	dsl	800	Olwl 66	800	100
Landis Drig	3	dsl	800	S/B N55	900	115
Quarles Drig	2	dsl	1500	OIME 1000	1000	180
	5	dsl	850	Nat 50A	500	120
Resource Drig	RD-25	dsl	1560	Nat 80B	1835	140
Rio Colorado Drig	143	dsl	1200	Nat T45	1100	125
Rod Ric	2	dsl	450	Beth S45E	400	75
Sharp Drig	32	dsl	1185	C-E 800	1482	165
TMBR Drig	30	dsl	350	MC U15	500	70
Verna Corp	13	dsl	600	S/B N4	400	65

ANGELINA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Lagersen Drig	5	d-e	1600	C-E J750E	1250	160

ARCHER

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Bennett Prod Corp	4	dsl	900	Permian 1000	900	130
E & H Drig	4	g-l	550	MC U15	550	75
Grand Drig	1	dsl	800	Shaf SS600S	475	80
Tommy's Oilwell Drig	2	dsl	800	Beth S50	476	70
	8	dsl	800	SOS 6000S	650	80

ATASCOSA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Alco Drig Southern	59	d-e	2600	C-E 11C	2000	180
Bearden Drig, Jack E	3	dsl	1200	Wils Mogul Super 42	750	95
Cinco Drig	1	dsl	900	MC U15	780	110

TEXAS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
BEE						
Pearl Expl	1	dsl	600	Wils 65	500	70
South Texas Drlg	8	dsl	600	S/B N46	550	80
BEXAR						
Magee-Poole Drlg	14	dsl	1475	Cbot Explorer III	700	90/4"
BORDEN						
Cactus Drlg Co	19	dsl	1050	Nat 50A	850	10
Delta Drlg	86	dsl	500	S-H 7000	480	90
McCutchen Drlg, J W	3	dsl	820	Wils Atlas Roadair	820	105
	4	dsl	820	Wils 90	820	120
Robinson Drlg of Texas	4	dsl	750	Nat 50A	900	125
Wes-Tex Drlg	9	dsl	700	Nat 50A	700	100
	17	dsl	335	MC U34	500	80
BRAIN						
Culver Drlg	4	dsl	800	S/B N45	700	100/4"
BRAZORIA						
Atco Drlg Southern	61	d-e	2600	C-E IIC	2000	200
Bawden Drlg, Peter (TX)	31	d-s	2000	Nat 110UE	1500	180
Big 6 Drlg	2	dsl	800	Cbot	600	100
	3	dsl	750	Cbot	600	110
Delta Drlg	20	d-s	2600	C-E C2 Type II	3456	200
Forex Neptune and/or Affil	51	d-e	3200	G-D 1500E	2000	217
Loffland Bros	107	dsl	2160	S/B N12	2400	170
M G F Drlg-Houston	39	dsl	2200	Nat 125	1500	200
Nicor Drlg	9	dsl	2000	OIME 1500SL	1500	180
Resource Drlg	15	dsl	1560	Nat 80B	1835	140
Richards Drlg Ltd	9	d-e	3400	Olwl E3000	3000	300
Spartan Drlg	4	d-e	600	Sup 700E	700	100
BRAZOS						
Atco Drlg Southern	4	dsl	1550	Nat 55	550	120
Circle C Drlg	1	dsl	1400	Nat 100	1450	150
Cothrum Drlg	20					
Haning & Young	102	d-m	2000	OIME SL7	1000	125
McMurrey Petr	3	dsl	800	S-H	750	100
Senior Drlg	40	dsl	1500	Cbot 1200	1300	135
Spartan Drlg	16	d-e	800	Sup700E	700	100
	18UE	d-e	600	Sup 700E	700	120
BROOKS						
Culver Drlg	11	dsl	1500	MC U914C	1500	170
Dixilyn-Field Drlg	25	d-e	1600	Nat 80UE	2000	150
Magee-Poole Drlg	10	dsl	1500	Cbot 900	950	110/4"
Rio Colorado Drlg	140	dsl	1200	Nat T45	900	105
BURLESON						
Basin Drlg	11	dsl	1470	G-D 700M	1220	140
	12	dsl	1470	G-D 700M	1220	140
Challenger Drlg	35	dsl	800	S/B N75	1200	120
Pozos Intl Drlg Serv	80	dsl	1890	S/B N46	940	125
PRC Drlg	3	dsl	1250	S/B N46	730	110
Rio Grande Drlg	8	dsl	550	Nat 370	770	100
Sterling Drlg (TX)	18	dsl	1250	Nat 610	1100	130
	19	dsl	1110	S/B N46	770	110
CALDWELL						
Nixon Drlg	1	dsl	300	Crdw CatD	300	40
	4	dsl	300	Stuart	300	40
	5	dsl	300	Wils	300	40
	6	dsl	300	Stuart	300	40
CALHOUN						
Eljay Drlg	2	d-s	2800	Olwl E2000	2000	250
M G F Drlg-Houston	31	dsl	700	Olwl 76	900	120
Magee-Poole Drlg	2	dsl	1500	OIME 750SL	1155	140
Richards Drlg Assocs	11	dsl	2500	Olwl 860	2400	180
CAMERON						
PRC Drlg	4	dsl	758	Cbot 900	900	100
CAMP						
Pozos Intl Drlg Serv	81	dsl	1890	S/B N46	940	125
CARSON						
Hudson Drlg, Leonard	8	dsl	300	Wils Mogul	300	60
Service Drlg (TX)	1	dsl	300	MC U34	300	45
	7	dsl	300	Beth S45	300	55
CASS						
Butler-Johnson	13	dsl	1200	S/B N75B	1200	130
Delta Drlg	15	dsl	1800	C-E D3 Type III	1040	135
Gibson Drlg	3	dsl	820	Wils Mogul 42	666	65
Schlensker Drlg	8	dsl	635	Wils Mogul 42	475	70
Transcontinental Drlg-Magnolia	2	gas	500	C-E GB350	500	85
	5	dsl	1050	Olwl 76	1050	115
CHAMBERS						
Kelley & Kerr Drlg	Paso Grande	dsl	1400	OIME SD5	800	125
M G F Drlg-Houston	37	dsl	500	G-D 500	700	90
M G F Drlg-Lafayette	43	dsl	1800	Olwl 96	1200	180
Richards Drlg Co	5	g-b	1200	S/B N75	900	125
	8	dsl	2500	Olwl 860	2400	180
CHEROKEE						
Cape Drlg	5	dsl	400	W-N Apache 95040	425	60
Delta Drlg	22	dsl	1800	C-E D3 Type III	1560	140
Forex Neptune and/or Affil	47	d-e	3200	G-D 1100E	1500	180
Globe Drlg	3	dsl	800	MC U15	800	120
Grace France Drlg	2	dsl	1700	Olwl 760	1700	170
Guffey-Schlensker Drlg	3	dsl	1270	Nat 75CA	1270	140
Henley Drlg	220	dsl	1200	Cbot 900	900	100
Schlensker Drlg	3	dsl	700	Olwl 760	1500	140
CLAY						
Burns L D Drlg	5	dsl	744	Beth S55	780	100
COCHRAN						
Norton Drlg	4	dsl	550	Wils 75	850	105
Sitton Drlg	2	dsl	650	Wils 75P	900	115
COKE						
D B Drlg	6	dsl	600	S/B N45	600	90
GCO Drlg	5	dsl	820	MC U15	850	95
COLEMAN						
Bandera Drlg	7	dsl	750	MAC 300	400	75
Megargel Drlg	2	dsl	750	MC U15	750	70
Mesa Drlg	2	dsl	675	Weis W45	500	80
Safari Drlg	2	dsl	370	Crdw L350	370	70
	4	dsl	310	Nat T20	270	60
	6	dsl	300	C-E U34	370	60
COLORADO						
B D K Drlg	10	dsl	1000	S/B N46	900	100
Frio Drlg	2	dsl	800	Nat J45	600	100
Howell Drlg	1	dsl	1000	Cbot 900	900	110
Loffland Bros	77	dsl	1450	Nat 100	1575	150
COMAL						
Loffland Bros	331	dsl	2160	MC U1220	2400	200
COOK						
Culver Drlg	16	dsl	800	G-D 700	800	140
COOKE						
Arbuckle Drlg	1	dsl	450	BDW 450T	600	90
Felderhoff Bros Drlg	3	dsl	600	MAC 400	350	75
Moran Drlg, E W	6	dsl	950	Beth S55	750	110
	20	dsl	1200	S-H 7000	450	95
COTTLE						
Bearden Drlg, Jack E	1	dsl	1200	Wils Mogul Super 42	750	90
Sojourner Drlg	5	dsl	250	MC U15	550	70
CRANE						
BJM Drlg & Expl	3	dsl	1200	Nat 150AC	1000	120
	4	dsl	1200	MC U15	1000	120
Hillin Drlg	6	dsl	500	Idco H25 Trailer Rig	360	50
Johnn Drlg	5	dsl	700	MC U15	700	85
	8	gas	800	S/B N75	800	125
Kenai Drlg of Texas	32	dsl	1200	C-E GA500	800	110
Resource Drlg	RD-26	dsl	1560	Nat 80B	1835	140
Rod Ric	4	dsl	750	Idco H40	600	85
TMBR Drlg	1	dsl	350	MC U15CA	500	60
Verna Corp	11	dsl	550	MC U15	810	115
	14	dsl	500	Wils Mogul 42	550	70
	20	dsl	1000	Verna Drlg	1500	160
	34	dsl	1000	C-E A800	1200	150
CROCKETT						
D B Drlg	12	dsl	1040	Nat 100	1040	160
Delta Drlg	4	dsl	2150	Nat 100	1560	160
Sterling Drlg (TX)	11	dsl	375	Idco H30	480	65
Tucker Drlg	6	dsl	750	S/B N75	750	120
Wes-Tex Drlg	15	dsl	335	S/B N4	500	80
CROSBY						
D B Drlg	1	dsl	410	S/B N4	460	75
CULBERSON						
Kenai Drlg of Texas	11	dsl	400	Nat T20	400	65
DAWSON						
Ard Drlg	4	dsl	900	MC U15	900	120
Cactus Drlg Co	4	dsl	950	Nat 55M	1100	130
	52	dsl	550	Idco H35	454	65
	54	dsl	600	Beth S55	454	60
	71	dsl	900	C-E U36A	916	100
GCO Drlg	7	dsl	1750	Nat 75CA	1500	130
M G F Drlg-Midland	11	dsl	900	Beth M58	900	125
Robinson Drlg of Texas	2	dsl	750	MC U15	900	100
Schlensker Drlg	7	dsl	800	Unit U15	950	95
Sterling Drlg (TX)	21	dsl	1180	S/B N46	770	110
TMBR Drlg	20	dsl	350	Idco H400	500	90
Wes-Tex Drlg	10	dsl	300	S/B N4	500	80
	18	dsl	600	Nat 50CA	900	100
DE WITT						
FWA Drlg	24	dsl	1350	Wils Mogul 42	720	110
Grace France Drlg	3	el	2400	Olwl E760	2400	170
Harkins & Co	13	dsl	1477	Cbot 1000	1000	120
Padre Drlg	10	dsl	1300	S/B 4610	450	85
Rio Grande Drlg	9	dsl	1300	Nat 110M	2400	200
South Texas Drlg	5	dsl	500	S/B N45	500	80
DIMMIT						
Dixon Drlg	12	dsl	900	S/B N4	450	60
DUVAL						
Buzzini Drlg	10	dsl	3600	Olwl M2000	2400	200
Delta Drlg	99	d-e	3200	C-E C2	3456	250
Diamond M Land Drlg	173	d-e	2700	MC 914EU	3000	160
Dixilyn-Field Drlg	9	dsl	2600	Nat 130	2331	200
Magee-Poole Drlg	1	dsl	1500	Cbot 900	950	110/4"
Pearl Expl	2	dsl	600	Wils 65	600	85
PRC Drlg	1	dsl	800	S/B H4610A38	500	80
San Patricio Corp	7	dsl	1000	S/B RR600	400	80
South Texas Drlg	9	d-e	1350	G-D 1500E	2000	250
Southland Drlg	7	dsl	650	S/B N55	600	100
EASTLAND						
Brunner Drlg	2	dsl		S/B N4	375	60
	4	dsl		Idco H38D	358	50
	7	dsl		Wich	350	50
E & H Drlg	2	dsl	400	MC U34	325	60
J & W Drlg	1	g-d	180	Harris 5000	340	50
	2	gas	180	Idco 150	180	35
	3	dsl	280	Wils Mogul 42	440	60
Tommy's Oilwell Drlg	9	dsl	800	Crdw L	500	40
ECTOR						
Cactus Drlg Co	18	dsl	550	Nat T32	850	80
	53	dsl	850	Beth S55	670	75
	60	dsl	550	Beth S45E	454	60
	65	dsl	550	S/B N4	454	60
D & R Drlg	2	st	2000	C-E EDA	1700	200
Delta Drlg	70	dsl	300	S-H 6000	380	70
	98	dsl	1500	Wils Giant Roadair	784	125
Drilltech Inc	1	dsl	1000	G-D 500M	850	100
	2	dsl	1000	G-D 500M	850	100
Johnn Drlg	4	dsl	700	MC U15	700	85
Kenai Drlg of Texas	15	dsl	600	C-E GB500	800	110
	16	dsl	700	C-E GA500	780	110
	17	dsl	800	S/B N4	580	70
	19	dsl	825	C-E GA500	800	110
	25	dsl	700	C-E GB500	800	110
Ladrido Drlg	1	[illegible]	1600	MC U15	1050	135
Loffland Bros	208	dsl	1560	Nat 110	1800	170
M G F Drlg-Midland	9	dsl	850	C-E GC500	850	140
Moran Bros	72	d-s	1300	Nat 110UE	1500	200
Norwood, A N	1	dsl	450	Wils Super 38	350	55
	2	dsl	700	S/B N4	450	60
	3	gas	1000	S/B N4	450	60
	4	dsl	600	Nat T20	450	60
Parker Drlg	211	gas	1000	Nat 75	1000	160
Price & Co, J A	3	dsl	1000	G-D Model 3000	370	50
Quarles Drlg	6	dsl	2000	S/B N95	2200	220
Rod Ric	7	dsl	900	W-M Hellhoist	900	100
	9	dsl	750	Idco H35	600	80
	10	dsl	670	C-E G500	600	85
Santa Fe Drlg	SFW-10	d-e	2000	C-E Electrohoist H11	1800	240
	SFW-12	d-e	2300	C-E A1100E	1800	200
	SFW-3	d-e	2900	C-E A1500E	2000	300
	SFW-4	d-e	2600	C-E C3111	3000	300

TEXAS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
ECTOR (Cont'd)						
Santa Fe Drlg	SFW-6	d-e	2300	C-E C3111	3000	300
	SFW-8	d-e	2600	C-E A1500E	2000	300
	25W	d-e	1000	Nat 80UE	1000	120
	26W	d-e	1000	Nat 80UE	1000	120
Sierra Drlg	1	dsl	500	BDW Min-Max	800	100
	2	dsl	500	BDW 600	800	100
Sierra Drlg Co	5	dsl	500	Weis W45	400	75
Tri-Service Drlg	3	g-b	750	Olwl 76	750	130
TMBR Drlg	12	dsl	700	Nat 50	600	105
Verna Corp	15	dsl	600	MC	600	115
	17	dsl	550	MC U15	650	115
	18	d-e	1000	Nat 1320E	2000	220
	31	dsl	1212	MC U15	800	110
	38	dsl	1212	MC U15	800	110
	40	dsl	700	MC U15	800	110
ERATH						
Lynx Drlg	1	dsl	1000	MC U15	720	100
	3	dsl	500	Idco H30	360	70
FALLS						
Cape Drlg	4					
FAYETTE						
Cinco Drlg	2	dsl	890	Nat T32	850	80
Houtech Drlg	801	dsl	1500	Seaco 1400M	1300	150
	802	dsl	1600	G-D 700M	1200	150
M G F Drlg-Houston	6	dsl	800	Nat T32	500	90
	8	dsl	600	S/B N55	550	105
	30	dsl	750	Nat 610	800	120
PRC Drlg	5	dsl	1198	G-D 700M	600	140
Rio Colorado Drlg	139	dsl	1200	Nat T45	900	115
TL Drlg	10	dsl	2000	S/B N75	1200	120
Williams Drlg of South TX	1	dsl	585	Cbot 750	750	95/4''
FISHER						
D B Drlg	10	dsl	410	S/B N4	460	75
Sojourner Drlg	2	dsl		MC U15	550	70
Texzona Drlg	1	dsl	475	MC U34B	450	65
Wes-Tex Drlg	19	dsl	600	S/B N4	600	80
FOARD						
Bennett Prod Corp	2	dsl	900	MC U15	900	130
Herb Expl	1	g-b		Fail 1500	100	15/2.38''
FORT BEND						
Rainbow Drlg	4	dsl	1600	Cbot 1200	1200	150
Southland Drlg	6	dsl	600	HT 1887600TD	600	85
FRANKLIN						
Gibson Drlg	4	dsl	506	Wils Mogul 65	398	50
FREESTONE						
Butler-Johnson	14	d-e	2000	G-D 1100E	2000	200
D B Drlg	25	dsl	800	Unit U15	800	105
Delta Drlg	90	d-e	2000	C-E D3 Type II	2592	160
Dual Drlg	7	dsl	2100	Nat 1320M	2000	250
FWA Drlg	20	dsl	1700	Wils Super Atlas	1040	140
	27	dsl	2000	G-D 800M	1560	155
	28	dsl	2700	G-D 1100M	1560	180
Hinton Drlg, W B	6	dsl	1600	Nat 80B	1650	150
	9	d-e	2600	Nat 110UE	3000	200
	11	d-e	2600	Nat 1320UE	3000	250
Justiss Oil	30	dsl	1000	Beth 1013	1400	170
Moran Bros	38	d-s	3200	C-E C2 Type II	2000	250
Noble Drlg	N-81	dsl	1420	Nat 80	1420	140
O'Neal Drlg	14	dsl	15000	Nat 80B	1500	150
	15	d-e	2000	G-D 800	1500	180
Verna Corp	28	dsl	1000	MC U15	600	100
FRIO						
F & N Drlg	1	dsl	525	Kremco K600	600	80
Southland Drlg	4	dsl	850	S/B N7	900	100
GAINES						
BJM Drlg & Expl	2	dsl	800	N 4218	600	85
Cactus Drlg Co	64	dsl	700	S/B N45	670	75
Cherokee Drlg & Dev	2	dsl	1150	Wils 75	900	11
	3	dsl	1150	Wils 75	900	110
	4	gas	1150	Wils 75	900	110
	5	dsl	900	BDW 450	531	70
Dual Drlg	30	dsl	1250	Olwl 500	600	9000
Grace/T R G Drlg	3	d-m	1245	G-D 700M	1100	130
	22	dsl	1290	Nat 80B	1305	160
Hondo Drlg	9	dsl	900	S/B N45	700	100
M G F Drlg-Midland	1	dsl	750	Beth M58	750	125
Moran Bros	71	d-m	500	Nat 370	550	85
Norton Drlg	3	dsl	475	Wils 75	850	105
Rod Ric	3	dsl	670	S/B N45M	820	100
Sitton Drlg	8	dsl	650	Wils 75P	900	100
Willbros Drlg	4	dsl	1700	Nat 55	1260	140
GALVESTON						
Challenger Drlg	48	dsl	1000	Unit U36	1000	130
CRC Mallard Well	11	ds	800	Wils 90	800	110
	16	dsl	1300	Wils 90	800	140
Frio Drlg	1	dsl	800	C-E 350	550	95
Goldrus Drlg	18	dsl	1700	1000 Cbot	872	140
	19	dsl	1110	Cbot 750	560	100
	23	dsl	870	Cbot 900	680	120
Nicor Drlg	79	d-m	2000	G-D 700M	700	140
Richards Drlg Co	3	dsl	1800	S/B N75	1200	125
GARZA						
Bandera Drlg	4	dsl	925	BDW 450T	540	85
GCO Drlg	2	dsl	640	BDW 450	450	80
Holliday Drlg	1	dsl	1000	G-D 700	1000	120
Wes-Tex Drlg	5	dsl	550	Nat 50A	700	100
GLASSCOCK						
Cactus Drlg Co	20	dsl	850	S/B N45	1080	70
Hondo Drlg	1	dsl	875	MC U15	700	100
	2	dsl	1050	S/B N55	700	100
Kenai Drlg of Texas	28	dsl	1200	S/B N7	800	120
Moran Bros	4	d-s	1500	C-E A800E	1000	150
Quarles Drlg	15	dsl	2000	RMI 1000	1000	150
Sharp Drlg	48	dsl	790	Beth M58	988	135
	61	dsl	2331	MC U914C	2742	235
Transcontinental Drlg-San Angelo	96	dsl	1000	MC U36A	850	120
Tri-Service Drlg	4	g-b	700	Olwl 66	750	100
	6	dsl	1800	Olwl 96	1800	160
Tucker Drlg	11	dsl	525	BDW 800	1200	140
Wes-Tex Drlg	4	dsl	650	C-E G500	650	10
GOLIAD						
Buzzini Drlg	9	dsl	3600	Olwl M2000	2400	200
Cinco Drlg	11	d-e	2000	Sup 1000	1000	160
Frio Drlg	3	dsl	900	S/B N55	900	105
FWA Drlg	18	dsl	1150	Wils Giant	360	75
Harkins & Co	10	dsl	1620	C-E B1013	1620	160
GONZALES						
Challenger Drlg	29	dsl	720	Nat T45	860	95
Cinco Drlg	4	dsl	1005	S/B N45	780	85
	9	dsl	1700	Beth 650	1100	160
Nixon Drlg	3	dsl	300	Crdw	300	40
GRAY						
Hudson Drlg, Leonard	2	dsl	900	MC U15	900	115
	4	dsl	900	MC U15	900	115
	5	dsl	900	S/B N7	900	115
	7	dsl	900	Unit U15	900	115
Service Drlg (TX)	3	dsl	300	MC U34	400	65
	6	dsl	300	MC U34	300	45
	11	dsl	400	MC U34	400	50
Stahico Drlg	1	dsl	510	C-E 360	475	50
GRAYSON						
Atco Drlg Southern	53	dsl	1600	Nat 610UE	800	120
Felderhoff Bros Drlg	1	dsl	285	Wils Mogul	185	55
	2	dsl	950	Wils Giant	650	95
Grace France Drlg	1	dsl	1600	G-D 700	900	130
Moran Drlg, E W	1	dsl	1700	G-D 700	800	130
	3	dsl	1300	G-D	800	140
	8	dsl	2200	Wils 150A	1650	150
Nicor Drlg	6	dsl	1500	Nat 55	700	135
Robinson Bros Drlg	GBL	dsl	1250	Idco 1200	1000	120
Viersen & Cochran Drlg	19	dsl	800	Nat 610	830	120
GREGG						
Delta Drlg	69	dsl		S-H 7000	480	90
Henley Drlg	9	d-e	2600	C-E C2	2600	250
Justiss Oil	14	dsl	800	C-E GB500	900	110
	32	g-b	700	Beth 450	900	120
	33	dsl	1000	Olwl 96	1400	170
GRIMES						
Big 6 Drlg	8	d-e	1600	Nat 610	900	120
Spartan Drlg	9	d-e	1000	Sup 1000E	1000	160
HANSFORD						
Baker & Taylor Drlg	2	dsl	1400	MC U20	1400	200
	4	dsl	1140	MC U20	1140	180
	5	dsl	1400	MC U20	1400	220
	14	dsl	1140	MC U40	1140	180
Bravo Drlg	2	dsl	870	BDW 800	870	140
Service Drlg (TX)	8	dsl	800	MC U15	630	70
HARDEMAN						
Bearden Drlg, Jack E	8	dsl	1200	Wils 75	900	95
Bennett Prod Corp	3	dsl	900	MC U15	900	130
Crawford Drlg	2	dsl	600	MC U15	800	100
	3	dsl	350	Wils Giant	350	65
	4	dsl	600	MC U15	800	100
HARDEMAN (Cont'd)						
Crawford Drlg	5	dsl	600	MC U15	800	100
	6		600	MC	800	100
	7	dsl	600	MC U15	800	100
	8	dsl	350	Olwl 64B	350	95
	9	dsl	350	Wils Roadaire	350	70
	10	dsl	800	C-E GB800	800	140
	11	dsl	600	Nat 50A	800	110
Guffey-Schlensker Drlg	2	dsl	600	S/B N45	700	80
Lee Drlg	1	dsl	1100	BDW 450T	500	90
	2	dsl	850	BDW 450T	550	90
	3	dsl	1100	BDW 450T	700	90
Moran Drlg, E W	18	dsl	860	S-H 7000	450	95
	19	dsl	1200	Wils 75	900	110
	23	dsl	1400	Wils 75	900	110
Schlensker Drlg	2	gas	700	Beth MC450	900	120
Theiss Drlg	1	dsl	900	S/B H46	900	100
	2	dsl	900	C-E U15	900	100
HARDIN						
M G F Drlg-Houston	32	dsl	750	Nat 610	800	120
Richards Drlg Co	2	dsl	1500	S/B N75	1200	125
Richards-Armstrong	7	dsl	1900	Cbot 1000	900	125
HARRIS						
Big 6 Drlg	7	dsl	800	Idco	600	100
Drillers	15	dsl	1000	Olwl 66	800	120
Haning & Young Drlg	201	d-e	2600	S/B NE95	1700	190
	202	d-e	2600	S/B NE95	1700	190
M N D Drlg-Southern	14	d-e	1820	MC U712	1200	160
Resource Drlg	19-RD	dsl	1040	Nat 610	1220	120
Rio Colorado Drlg	119	dsl	1300	C-E A800	1600	120/5''
	138	dsl	1750	Idco H1000	1000	120
	141	dsl	1200	Nat T45	900	105
Spartan Drlg	6	d-e	600	Sup 700E	700	100
TL Drlg	11	dsl	1600	S/B N75	800	140
	12	dsl	1150	Idco H750	800	120
Wilson Bros Drlg	12	dsl	1850	Nat 110	1850	160
HARRISON						
Dixon Drlg	7	dsl	1700	S/B N46	950	130
Lohmann Drlg	17	gas	800	MC U15 SN356	600	100
Rosamond Drlg	12	dsl	850	S/B N46	850	100
HASKELL						
Hack Drlg	4	dsl	225	Nat T8	250	40
Safari Drlg	8	dsl		Detroit Diesel 8V		80
Wes-Mor Drlg	7	dsl	680	MC U34	680	75
HEMPHILL						
Baker & Taylor Drlg	6	dsl	1400	MC U40	1400	200
Bonray Drlg	21	dsl	990	Idco H750	660	120
Helmerich & Payne Intl Drlg	54	dsl	1100	Olwl 76	1210	160
	85	d-s	1700	Olwl 760E	760	160
King Drlg	1	dsl	1177	Crdw 700	800	120
	9	dsl	1177	Crdw 700	800	125
Moran Bros	34	dsl	1700	Olwl 760	1000	150
	68	d-s	3200	C-E C2 Type II	2000	250
Moran Drlg, E W	13	dsl	1400	G-D 700	800	130
	29	dsl	1400	G-D 700	800	130
Quarles Drlg	10	dsl	2700	MC U914C	2400	220
Service Drlg (TX)	12	dsl	1000	C-E D2	800	120
Slawson Drlg	7	dsl	480	Idco H525	480	115
Unit Drlg & Expl	15	dsl	1300	MCSCO 914C	1850	250
HENDERSON						
Grace France Drlg	4	dsl	1300	G-D 500	800	110
	6	dsl	1300	Nat 610	900	130
Maxwell Herring Drlg	21					
HIDALGO						
Cinco Drlg	12	d-e	3000	Nat 1320UE	2400	240
Cliffs Drlg	40	d-e	2600	Nat 1320UE	3025	250
Delta Drlg	87	d-s	2000	C-E D3 Type II	2592	160
	88	d-s	2600	C-E C1 Type II	3456	180
	89	d-s	2000	C-E D3 Type II	2592	160
	95	d-e	2900	C-E C1 Type II	3456	200
Dixilyn-Field Drlg	23	dsl	2800	Olwl 860	2331	180
Magee-Poole Drlg	15	dsl	1475	Cbot Expl III	700	90/4''
Resource Drlg	RD-24	dsl	2330	Nat 110	2740	180
	3	dsl	3105	Nat 1320	3740	250
	8	dsl	2330	Nat 110	2740	180
	14	dsl	2330	Nat 110	2740	180
Rio Grande Drlg	7	dsl	750	OIME SL5	1500	120
Willis Drlg	2	dsl	1000	Beth B-Line MC450	1000	120
	3	dsl	1000	S/B N75	1000	120
	7	dsl	2500	S/B N95	2500	180
	8	dsl	1600	BDW 800	1100	120

TEXAS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
HOCKLEY						
D & R Drlg	1	st	1800	Nat 3410FE	1700	140
D B Drlg	7	dsl	730	Nat 50A	730	110
Norton Drlg	7	dsl	450	Wils 65	650	85
	12	dsl	1000	Wils 75	900	120
Rod Ric	8	dsl	670	S/B N45	600	80
Sojourner Drlg	6	dsl		MC U15	550	70
Verna Corp	1	dsl	600	S/B N55	800	125
	3	dsl	500	S/B N45	500	65
	4	dsl	500	S/B N4	500	65
	5	dsl	500	Wils Mogul	500	65
	6	dsl	550	S/B N55	800	120
	7	dsl	700	MC U15 Type	800	110
	8	dsl	500	Idco H40	500	65
	9	dsl	600	Idco H40	500	65
	33	dsl	550	MC U15	800	90
	36	dsl	550	MC U15	550	110
	39	dsl	600	MC U15	550	110
HOPKINS						
Globe Drlg	8	d-e	3000	G-D GD1000	1500	200
Maxwell Herring Drlg	20	dsl	1800	S/B 75A	1200	1120
HOUSTON						
Atco Drlg Southern	55	d-e	2000	Nat 80UE	1000	150
Bawden Drlg, Peter (TX)	15	d-s	1600	Nat 610E	750	120
Helmerich & Payne Intl Drlg	87	d-s	800	Nat 1625ME	3000	300
Loffland Bros	118	d-e	3300	MC U1220EBD	3300	250
Maxwell Herring Drlg	2	dsl	1034	Beth M810	926	120
McMurrey Petr	1	dsl	800	S-H	750	100
Parker Drlg	129-HH/ 17	dsl	1500	OIME TBA2000	2000	200
	133-HH/ 21	dsl	1500	OIME TBA2000	2000	200
HOWARD						
Corky Drlg	1	dsl	325	Crdw 350	350	60
Fiscus Drlg	1	dsl	350	Wils Super 385	350	34/ 4"
FWA Drlg	9	dsl	1150	Wils Giant	720	115
Riley Drlg	4	dsl	300	Cbot	300	45
Safari Drlg	5	dsl	370	C-E GA250T	280	50
Transcontinental Drlg-San Angelo	95	dsl	750	G-D 500	750	120
TMBR Drlg	4	dsl	840	Nat 50CA	600	105
Wes-Tex Drlg	16	dsl	335	S/B N4	500	80
HUDSPETH						
Cherokee Drlg & Dev	7	dsl	1500	BDW 650	1050	120
HUTCHINSON						
Cheyenne Drlg	5	dsl	400	Nat T-20	450	50
Diatom Drlg	2	dsl	630	I-R 600	650	100
IRION						
BJM Drlg & Expl	1	dsl	600	MC U15	600	120
D B Drlg	5	dsl	390	S/B N4	460	75
FWA Drlg	12	dsl	915	Wils Giant	900	100
Mellon Drlg	2	dsl	1300	C-E GB350	750	100
	4	dsl	750	Beth S50	375	70
Transcontinental Drlg-San Angelo	30	dsl	750	S/B N55	750	100
	33	dsl	898	Unit U15	650	85
	34	dsl	674	Beth S55	650	80
Wes-Tex Drlg	2	dsl	650	Beth S45E	650	100
JACK						
Burns L D Drlg	2	dsl	900	Wils 75	780	105
Megargel Drlg	6	dsl	350	Beth S45B	275	60
Originala Drlg	1	dsl	400	Wils Super 38	400	60
	2	dsl	400	Wils Giant	400	70
	3	dsl	400	Nat 50A	400	85
JACKSON						
Delta Drlg	81	dsl	1300	S-H 7600	480	90
Frio Drlg	4	dsl	1100	Nat N55	1100	120
Louise Drlg	1	dsl	2684	Idco H40	1006	110
Nicklos Drlg	76	d-e	2600	Nat 1320UE	1800	250
Padre Drlg	7	dsl	700	S/B H14610	750	100
	8	dsl	700	S/B H14610	750	100
JASPER						
Henley Drlg	5	d-e	2600	C-E C1	1650	180
JEFFERSON						
Big Chief Drlg	11	dsl	1350	S/B N75	1350	130
	22	gas	1600	Nat 80B	1600	140
	25	dsl	3000	Nat 110	2000	200
	35	gas	2610	Nat 110	2610	200
	44	dsl	2400	S/B N95	2400	200
JEFFERSON (Cont'd)						
Diamond M Land Drlg	171	dsl	1300	MC Unit 712	1200	145
	172	gas	1750	Nat 110M	2550	160
Drillers	51	d-h	400	Shaf CSD820	400	180
Loffland Bros	110	dsl	2160	S/B N12	2400	200
	322	dsl	1800	G-D 800	2100	160
Nicor Drlg	75	d-m	1750	Cbot 2550TRD	1200	150
Rosamond Drlg	6	dsl	1275	C-E A550	1275	125
Southland Drlg	3	dsl	1300	S/B N75	750	110
Wilson Bros Drlg	5	dsl	2600	Nat 110M	2700	200
JIM HOGG						
Challenger Drlg	46	dsl	900	Idcu 750	900	100
Magee-Poole Drlg	12	dsl	1500	Cbot 900	950	110/ 4"
JIM WELLS						
Dixilyn-Field Drlg	2	dsl	1300	S/B 11-75	1040	120
	4	dsl	2600	Nat 1625M	3105	250
	8	dsl	1950	Nat 110	2331	180
	10	dsl	1295	Nat 55	1040	120
	18	dsl	2300	MC U914C		2331
	19	dsl	1925	Nat 130	2331	200
Magee-Poole Drlg	6	dsl	2000	OIME SL7	1300	168
Murlynson Drlg	10	dsl	1000	MC U15	600	100
Murphy Drlg, Pete	1	dsl	800	Crdw C Horse	300	60
JONES						
Cothrum Drlg	9	dsl	900	S/B N4	500	65
Dixon Drlg	9	dsl	700	S-H 5000 Port	450	60
KARNES						
Atco Drlg Southern	52	dsl	1500	MC U40	900	120
Buzzini Drlg	8	dsl	3600	Olwl M2000	2400	200
KAUFMAN						
Maxwell Herring Drlg	15	dsl	1200	S-H	400	100
KENEDY						
Atco Drlg Southern	11	dsl	1600	Nat 55	550	120
Dixilyn-Field Drlg	12	dsl	2600	Nat 110M	2331	180
Harkins & Co	12	dsl	1050	Cbot 750	650	95/ 4"
	14	dsl	1150	Cbot 900	900	110/ 4"
Willis Drlg	5	dsl	800	MC U15	800	100
	6	dsl	3000	Idco	3000	250
KENT						
Bandera Drlg	2	dsl	470	MC U34	360	65
Dixon Drlg	8	dsl	900	S/B N42	550	80
Douglas Drlg	2	dsl	900	BDW 650M	900	125
Robinson Drlg of Texas	3	dsl	750	MC U15	900	100
Verna Corp	10	dsl	700	MC U36A	1200	120
KING						
Mesa Drlg	1	dsl	725	TSM 6000	450	75
Wes-Mor Drlg	4	dsl	400	MC U15		75
	5	g-t	465	MC U15	290	75
KLEBERG						
Harkins & Co	11	dsl	1260	S/B N75	1260	125
Willis Drlg	9	dsl	1000	G-D 700	1000	120
LA SALLE						
South Texas Drlg	6	dsl	650	S/B N46	800	100
LAMB						
Sitton Drlg	7	dsl	450	Wils 75P	900	115
LAVACA						
B D K Drlg	4	dsl	1095	S/B N7	870	115
Faith Drlg	2	dsl	1500	Nat 55	1300	120
Howell Drlg	2	dsl	1550	Cbot 1200	1130	150
Padre Drlg	4	dsl	500	S/B H4210	400	75
Parker Drlg	215	gas	2200	OIME 1500C	2200	220
Spartan Drlg	17E	d-e	1000	Olwl 760E	1000	160
LEE						
B D K Drlg	9	dsl	1480	S/B N75	1000	120
Challenger Drlg	20	dsl	900	S/B N75	1000	120
Drillers	5	dsl	900	MC U15M	1200	110
M G F Drlg-Houston	7	dsl	700	MC U15	800	110
M G F Drlg-Midland	6	dsl	750	Nat T32	750	90
	7	dsl	850	S/B N55	850	120
	8	dsl	800	MC Rig U15	800	100
Nixon Drlg	7	dsl	400	Midway	600	65
Spartan Drlg	15E	d-e	600	Sup 700E	700	120
Sterling Drlg (TX)	10	dsl	1400	S/B N75	1100	130
LEON						
Culver Drlg	6	d-e	2000	G-D 2100	2000	300/ 5"
Henley Drlg	7	d-e	2600	C-E C2	2000	250
Justiss Oil	25	dsl	250	C-E GC350	450	120
	36	dsl	1000	1013	1200	160
LIBERTY						
Aguila Drlg	11	mch	250	Trailer Mounted		60
Bailey Drlg, Pernie	21	dsl	500	C-E J750	800	110
Goldrus Drlg	5	d-e	3400	Olwl E2000	1700	200
	20	dsl	1950	Cbot 1200	1054	150
M N D Drlg-Southern	7	dsl	1540	BDW 800	770	100
Pozos Intl Drlg Serv	1080	dsl	1500	Idco BIR8005	940	110
Rosamond Drlg	9	dsl	2300	G-D 700	1230	140
LIMESTONE						
Butler-Johnson	2	dsl	1900	S/B N85	1900	150
	12	dsl	1300	G-D M700	1300	125
Delta Drlg	5	dsl	2000	Nat 100	1560	160
FWA Drlg	26	dsl	2000	G-D 800M	1560	140
Gibson Drlg	5	dsl	1030	Wils 75P	700	90
M N D Drlg-Southern	2	dsl	1794	S/B N75	1024	140
Maxwell Herring Drlg	3	dsl	1000	G-D 800	1000	120
LIPSCOMB						
Drillers	23	dsl	600	MC U15	600	100
Hudson Drlg, Leonard	6	dsl	550	S/B N7	900	120
Jones Drlg Co, Loyd	88	dsl	1200	Cbot 750	750	100
Mercury Drlg	4	dsl	1500	MC U15	950	120
	11	dsl	1500	C-E U15	950	90
Service Drlg (TX)	13	dsl	400	MC U1500	800	120
Triad Drlg	9	dsl		BDW 650	800	120
Zenith Drlg	1	dsl	700	S/B N75	700	95
LIVE OAK						
Bawden Drlg, Peter (TX)	30	d-m	1850	C-E D3 Type III	1000	150
Dixilyn-Field Drlg	24	dsl	2800	Olwl 860	2331	180
FWA Drlg	25	dsl	2000	Wils 120	1560	160
Harkins & Co	1	dsl	1800	C-E C Type III	1800	180/ 5"
	9	dsl	2100	C-E A1100	2100	180/ 5"
Magee-Poole Drlg	5	dsl	1500	Cbot 900	950	110/ 4"
Nicor Drlg	51	d-m	1000	Idco H900M	1000	150
	56	d-e	2700	MC U1220EB	2000	250
Resource Drlg	5	dsl	2330	Nat 110	2740	180
	18	dsl	1040	Nat 610	1220	120
Rosamond Drlg	8	dsl	2475	Nat 130	2475	200
South Texas Drlg	7	dsl	910	Idco H1200	1200	150
LOVING						
Cactus Drlg Co	2	dsl	2200	Nat 110 M	2550	200
	30	dsl	2000	Nat 110	1650	200
Loffland Bros	20	d-e	3200	C-E C3000	3000	350
Parker Drlg	39	gas	1600	OIME Hercules 2500M	1600	230
	184	d-e	3000	OIME E3000	3000	300
Rod Ric	6	dsl	450	Beth S45E	450	75
Rowan Drlg US	8	dsl	2600	MC U1220S	2400	250
Santa Fe Drlg	SFW-16	d-e	1300	C-E C11	2000	250
Sharp Drlg	43	dsl	2331	Olwl M2000	2742	300
	55	dsl	2321	G-D 2100	2742	300
	60	d-e	3108	C-E C3 Type II	3656	300
	66	d-e	2331	MC U1220EB	2742	300
	72	d-e	2160	Olwl 840E	2430	220
Sterling Drlg (TX)	3	dsl	800	Nat 50CA	820	100
LUBBOCK						
D B Drlg	3	dsl	410	S/B N4	400	75
Norton Drlg	5	dsl	550	Wils 75	850	105
	8	dsl	550	Wils 75	900	140
Sitton Drlg	4	dsl	650	Wils 75P	900	100
	6	dsl	650	Wils 75P	900	100
LYNN						
Norton Drlg	11	dsl	550	Wils 75	900	120
McMULLEN						
Blocker Drlg-Alice	15	dsl	1265	Cbot 900	950	100
	17	dsl	825	S-H	530	70
Buzzini Drlg	11	d-e	3400	Olwl E3000	3000	300
Cinco Drlg	14	d-e	2400	OIME SD5	1500	140
Delta Drlg	63	d-e	2600	C-E C1 Type II	2592	160
Harkins & Co	4	dsl	1260	S/B N75A	1260	125
Helmerich & Payne Intl Drlg	37	dsl	2835	Olwl M2000	2835	220
Magee-Poole Drlg	8	dsl	1500	Cbot 900	950	110/ 4"
Santa Fe Drlg	SFW-	d-e	3200	C-E C3111	3000	300
MADISON						
Bailey Drlg, Pernie	22	dsl	1500	OIME SL5	900	130
M G F Drlg-Houston	38	dsl	1600	C-E C1	1200	170
M N D Drlg-Southern	6	dsl	1540	G-D 500	770	105
Nicklos Drlg	78	dsl	1400	Nat 80B	1080	140

TEXAS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
MARTIN						
Drillers	24	dsl	900	S/B N55	900	120
FWA Drlg	30	dsl	1100	Wils Giant	900	100
Holliday Drlg	2	dsl	1200	Olwl 76	1200	140
Hondo Drlg	11	dsl	1050	MC U15	700	100
Hurt & Assoc, Clint	12	dsl	1200	Wils 75	900	110
Landis Drlg	2	dsl	1000	S/B N75	1350	140
Moran Bros	86	dsl	1300	S/B N75A	750	150
Robinson Drlg of Texas	6	dsl	950	S/B N75	1350	125
Sharp Drlg	370	d-e	1488	MC U712EC	1995	180
Tahoe Drlg	2	dsl	800	C-E D1	800	100
	3	dsl	1000	C-E D2	1200	135
TMBR Drlg	5	dsl	700	Nat 50CA	600	105
	13	dsl	700	MC U15CA	500	105
	18	dsl	500	MC U15CA	840	100
Wes-Tex Drlg	20	dsl	600	Nat 50CA	900	100
MATAGORDA						
Delta Drlg	101	d-s	2600	C-F C1 Type II	2730	200
Pozos Intl Drlg Serv	981	dsl	1880	S/B N46	940	125
Richards-Armstrong	6	dsl	2500	Olwl 860	2400	180
MIDLAND						
Britton Inds Drlg	1	dsl	1000	Olwl 76	800	150
	4	dsl	1000	Nat 50CA	1000	130
Cactus Drlg Co	7	dsl	1400	Olwl 76	1650	140
	11	dsl	850	C-E G350	1050	85
	15	dsl	1050	Beth 650	1200	150
	31	dsl	2000	Nat 1320	2550	250
	32	dsl	2000	Nat 1320	2550	250
	34	dsl	700	Nat 75	1200	120
FWA Drlg	2	dsl	1100	Wils Super Giant	1040	130
Hurt & Assoc, Clint	9	dsl	1300	Wils 75	900	110
	11	dsl	1200	Wils 75	900	110
Ladrido Drlg	4	dsl	1200	J750	1050	140
M G F Drlg-Midland	3	dsl	500	Nat 32	400	70
	5	dsl	500	C-E GA250	400	90
	10	dsl	900	Beth M58	900	120
	22	dsl	1500	Olwl 760	1500	150
	25	dsl	1725	S/B N95	1725	190
	201	dsl	1600	Nat 1320UE	2000	300
	202	dsl	1600	Nat 1320 UE	2000	300
	203	dsl	1300	Nat 110UE	2000	200
Sharp Drlg	38	dsl	790	Beth M58	988	120
	52	dsl	1560	Beth M810	1836	190
	63	dsl	1500	C-E D3	1836	180
Sierra Drlg Co	4	dsl	500	OIME SL5	1000	150
Sterling Drlg (TX)	2	dsl	1500	Nat 610	1150	130
	4	dsl	1075	Nat 50A	900	120
	9	dsl	1350	S/B N75	1100	140
	16	dsl	1400	S/B N75	1230	140
	17	dsl	1500	S/B N75	1230	140
	22	dsl	1520	Nat 610	1100	130
Tierra Drlg	9	dsl	650	MC U15	700	100
	10	dsl	650	BDW 650	700	105
	11	dsl	650	BDW 650	700	120
	12	d-e	750	BDW 800MX	1000	140
	15		1000	MC U712EA	1200	160
	19	d-e	800	MC U36EA	650	120
	20	d-e	800	BDW 800	800	140
	21	d-e	800	BDW 800	800	140
TMBR Drlg	6	dsl	700	Nat 75CA	750	120
	25	dsl	700	G-D 500	700	110
	32	dsl	1200	Nat T16		
MILAM						
Nixon Drlg	2	dsl	300	Crdw	300	40
MILLS						
Cothrum Drlg	8					
MITCHELL						
GCO Drlg	1	dsl	640	Nat T20	450	75
Riley Drlg	3	dsl	300	MC U34	225	40
MONTAGUE						
Burns L D Drlg	3	dsl	800	Wils 75	780	105
	4	dsl	886	Wils 75	780	120/ 4"
C M D Drlg	1	dsl	400	Wils Mogul 42	400	70
Dual Drlg	36	d-e	2000	Olwl 760	1000	160
Gufley-Schlensker Drlg	1	dsl	700	Unit U36A	933	110
Luke Grace Drlg	1	g-b	500	MC U15	750	105
Maxwell Drlg	1	dsl		Nat U15		100
	5	dsl		Beth M650		120
Schlensker Drlg	1	gas	700	Nat 75CA	1050	140
	4	gas	700	MC U15	800	100
Sun Country Drlg	31	dsl	500	Hyster A	550	100
MONTGOMERY						
Dixilyn-Field Drlg	11	dsl	2600	Nat 110M	2331	180
M N D Drlg-Southern	3	dsl	1704	S/B N75	1024	125
	5	dsl	1536	S/B N95	1536	180
	9	dsl	1840	G-D 500	770	105
MONTGOMERY (Cont'd)						
M N D Drlg Southern	10	d-e	1820	S/B N95	1820	200
	12	d-e	1820	MC U712	1200	160
	15	d-e	2000	MC U712	1200	160
Pozos Intl Drlg Serv	581	dsl	3000	S/B N12A	2650	250
Resource Drlg	RD-20	dsl	1040	Nat 610	1220	120
TL Drlg	20	dsl	4800	S/B N95	2400	180
MOORE						
Diatom Drlg	1	dsl	456	I-R 550	574	75
NACOGDOCHES						
Gibson Drlg	7	dsl	895	C-E GB350	660	85
Murco Drlg	6	dsl	2200	S/B N95	1000	140
Noble Drlg	OW-77	dsl	800	Olwl 760	800	140
Nowotny & Conley Drlg	1	dsl	2000	OIME SL-1000	1200	150
Schlensker Drlg	9	dsl	1500	OIME 1500SL	2205	180
NAVARRO						
Noble Drlg	N-58	dsl	800	Nat 55	800	120
	N-59	dsl	800	Nat 55	800	120
Rosamond Drlg	5	dsl	1275	Beth MC450	1275	125
NEWTON						
Continental Drlg	11	d-e	2600	Idco E1700	1700	190
Eljay Drlg	1	d-s	2800	Olwl E2000	2000	250
Explorer Drlg	8	dsl	1836	Idco H1700	2000	150
Power Rig Drlg	16	d-s	2800	C-E C1 Type II	3084	180
NOLAN						
Mesa Drlg	3	dsl	675	Weis W45	550	80
Sojourner Drlg	1	dsl		MC U15	550	70
	3	dsl		MC U15	550	70
Wes-Tex Drlg	14	dsl	335	S/B N4	500	80
NUECES						
Cliffs Drlg	29	dsl	2600	Nat 110	2475	200
Harkins & Co	3	dsl	1260	S/B N75A	1260	125
J 3 Drlg	1	dsl	1375	MC U36A	950	140
	2	dsl	1650	MC U36A	950	140
	3	dsl	1100	MC U34B	750	85
	4	dsl	1100	MC U34B	750	85
	5	dsl	2470	MC U914	2470	200
Magee-Poole Drlg	7	dsl	1130	Cbot 750	608	90/ 4"
PRC Drlg	2	dsl	880	MC U34	460	75/ 4"
	8	dsl	770	S/B N95A	777	180
	9	dsl	1140	RMI 4010	1140	140
OCHILTREE						
Eagle Drlg	3	dsl	1100	BDW 800	1500	140
Hudson Drlg, Leonard	1	dsl	900	MC U15	900	115
	3	dsl	900	MC U15	900	115
ONEOK Drlg	2	d-e	1410	MC 36A	1000	130
Rine Drlg	4	gas	750	S/B N75	750	120
Service Drlg (TX)	5	dsl	1000	MC U15	800	100
Unit Drlg & Expl	1	dsl	500	MC U15	800	110
	3	dsl	700	Nat 50A	800	110
	4	dsl	500	MC U15	800	110
	7	dsl	500	MC U15	800	110
Zenith Drlg	3	dsl	800	S/B N75	800	100
	5	dsl	1100	BDW 800	1100	160
OLDHAM						
Baker & Taylor Drlg	1	dsl	870	MC U15	870	100
	7	dsl	870	MC U15	870	110
	8	dsl	870	MC U15	870	110
	9	dsl	870	MC U15	870	110
	10	dsl	870	MC U15	870	110
	11	dsl	1140	C-E GCA500	1140	120
	12	dsl	870	MC U15	870	110
	19	dsl	870	MC U15	870	110
ORANGE						
Big 6 Drlg	6	dsl	800	Cbot	950	120
Spartan Drlg	12	d-e	500	Sup 700E	700	100
PALO PINTO						
Carter Dev	2	dsl	300	Wils Mogul	300	60
E & H Drlg	1	dsl	700	MC U15	700	75
M N D Drlg-Northern	53	dsl	800	MC U15	600	90
Sealy & Co	1	dsl	290	G-D 1500	290	15
PANOLA						
Gibson Drlg	10	dsl	1200	C-E D2	1200	120
Hinton Drlg, W B	8	dsl	1300	S-H 7000	400	100
Sawyer Drlg & Serv	11	dsl	600	Wils Giant	400	90
	13	dsl	400	Wils Giant	400	90
Wheless Drlg	2	dsl	1200	C-E D2	1200	110
PARKER						
Sun Country Drlg	26	dsl	700	Crdw L	350	40
	34	dsl	400	Hyster B	500	75
PECOS						
Delta Drlg	38	dsl	2600	C-E C2 Type III	2331	230
	100	d-e	2000	C-E D3	1580	160
FWA Drlg	14	dsl	900	Wils Mogul 42	600	75
Henley Drlg	2	d-e	2800	C-E C2	2000	250
Hillin Drlg	2	dsl	800	C-E G500	800	110
	5	dsl	1200	Nat H1200	1200	150
Kenai Drlg of Texas	13	dsl	800	C-E GA250T	400	65
	20	dsl	500	C-E GB250T	400	65
Loffland Bros	112	d-e	3300	MC U1220EB	2200	250
Moran Bros	58	dsl	1300	Cbot 750	750	90
Parker Drlg	16	gas	1000	Olwl 76	1000	160
	74	gas	1400	Nat 100M	1400	225
	87	gas	1800	Idco E2000	1800	250
	121	d-e	2700	Idco E3000	3000	300
Resource Drlg	2	dsl	1560	Nat 80B	1835	140
Sharp Drlg	34	dsl	2331	Beth 1013	2742	300
	64	dsl	1560	Olwl 760	1836	180
	67	dsl	2331	MC U914C	2742	235
	73	d-e	4250	C-E C3	4640	300
Tri-Service Drlg	5	g-b	1800	Olwl 760	1400	160
Wes-Tex Drlg	7	dsl	335	S/B N4	450	80
POLK						
Cliffs Drlg	33	dsl	2000	Nat 80B	1650	145
Delta Drlg	6	dsl	2600	C-E C1 Type III	2592	220
	80	dsl	1300	S-H 7000	480	90
Forex Neptune and/or Affil	46	d-e	3200	G-D 1500E	2000	217
Wooll & Magee	11	dsl	850	Beth S45E	500	95
RAINS						
Delta Drlg	21	dsl	2300	G-D 1100	2592	170
	54	dsl	2000	Nat 80B	1560	140
Hinton Drlg, W B	7	dsl	1600	Nat 80B	1650	150
Transcontinental Drlg-Magnolia	35	dsl	1000	G-D 800M	1000	150
REAGAN						
Big Chief Drlg	9	dsl	1200	Idco H35S	700	100
	24	gas	1200	MC U15	900	110
BJM Drlg & Expl	5	dsl	600	MC U15	600	120
D B Drlg	8	dsl	550	Beth S55	720	95
	14	dsl	730	Nat 50CA	730	110
Dual Drlg	19	dsl	2100	Olwl 760	1000	160
FWA Drlg	1	dsl	1300	Wils Giant	900	110
	4	dsl	1365	Wils Giant	900	110
	8	dsl	1065	Wils Giant	900	110
Hondo Drlg	8	dsl	1100	S/B N45	700	120
Hurt & Assoc, Clint	10	dsl	1200	Wils 75	900	110
M G F Drlg-Midland	2	dsl	800	MC U15	800	100
Moran Bros	54	dsl	970	Nat T20	300	60
	67	dsl	1700	C-E D3 Type III	1000	150
Riley Drlg	2	dsl	300	Nat	300	45
Tahoe Drlg	1	dsl	900	Nat 50CA	1000	110
	4	dsl	950	G-D 500M	950	120
	5	dsl	600	Wils 75	800	100
Tierra Drlg	6	dsl	850	S/B N4	800	80
Wes-Tex Drlg	12	dsl	335	S/B N4	500	80
REEVES						
Cactus Drlg Co	62	dsl	550	Idco H35	454	60
Kenai Drlg of Texas	18	dsl	410	Idco H35	450	65
Parker Drlg	88	d-e	2700	Nat 130	3000	300
Sharp Drlg	59	dsl	2331	Beth MC950	2742	230
Willbros Drlg	9	d-s	3000	Idco E1700	3000	250
Wilson Bros Drlg	20	dsl	800	Nat 80B	1425	160
REFUGIO						
Burro Drlg	1	dsl	500	Wils Mogul 42	500	90
Corpus Christi Drlg	5	dsl	300	Wils Super 38	250	60
J & C Drlg	9	dsl	1050	Wils 600	630	90
San Patricio Corp	5	dsl	1000	Shaf 800	600	90
ROBERTS						
Baker & Taylor Drlg	3	dsl	1200	MC U20	1200	180
Sage Drlg	4	dsl	800	MC U15	800	110
Service Drlg (TX)	4	dsl	500	MC U15	800	92
	9	dsl	1000	MC 800	800	100
ROBERTSON						
M N D Drlg-Southern	4	dsl	1540	G-D 1100	1540	180
RUNNELS						
Bandera Drlg	6	dsl	600	MC U34	380	65
	10	dsl	775	MAC 300	475	75
Hack Drlg	2	dsl	350	S/B N4	350	70
Lange Drlg, LeRoy	1	dsl	225	Jaswell	525	35
Morrison Drlg & Prod	101	dsl	450	Nat T20	476	80
Safari Drlg	1	dsl	640	MC U15	640	100
	3	dsl	340	S/B N4	300	70

TEXAS (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
RUSK						
Cothrum Drlg	3	del	1200	S/B N72W	912	120
Gibson Drlg	2	del	526	Wils Mogul 65	398	50
	11	del	1200	C-E D2	1200	120
	12	del	900	C-E D2	900	120
Globe Drlg	5	del	850	Olwl 76	1000	140
	6	del	700	C-E C50	700	100
Grace France Drlg	7	del	1300	G-D 500	800	110
Justiss Oil	5	del	450	Beth S45E	300	65
Lester Drlg, Dan	9	del	1500	Olwl 760	1500	160
Loffland Bros	203	del	1140	MC U15	1000	100
Nowotny & Conley Drlg	7	del	1600	Nat 610	600	130
Rainbow Drlg	3	del	1600	Cbot 900	900	110
Schlensker Drlg	6	del	950	MC U15	950	100
SABINE						
Challenger Drlg	47	del	700	G-D 500	600	80
Justiss Oil	31	g-b	500	Wils Giant Roadair	650	100
Rosamond Drlg	11	del	1425	OIME SL5	1425	150
SAN PATRICIO						
Corpus Christi Drlg	4	del	300	Wils Super 38	250	54
Frio Drlg	5	d-e	1000	Idco ED1200	1200	160
Harkins & Co	5	del	1200	Cbot 750	650	95/4"
Magee-Poole Drlg	4	del	1500	Cbot 900	950	110/4"
Padre Drlg	2	del	500	S/B H4210	400	75
	9	del	1300	S/B 4610	450	85
Southland Drlg	8	del	700	C-E GB350	700	80
SCHLEICHER						
Mellon Drlg	1	del	750	C-E GB250	570	78
Tucker Drlg	8	del	550	Idco H40	550	90
	9	del	750	Nat	750	100
	10	del	750	S/B N45	750	75
Wes-Tex Drlg	6	del	650	Beth S60	700	100
SCURRY						
D B Drlg	2	del	475	Nat T32	460	80
	11	del	475	Nat T32	730	85
	24	del	550	Beth S45E	600	80
GCO Drlg	4	del	1200	BDW 650M	650	100
Wes-Tex Drlg	21	del	350	MC U34	450	70
SHACKELFORD						
Bandera Drlg	1	del	750	MAC 300	475	75
	5	del	650	MAC 300	475	75
Jones Drlg Co	51	del	425	S/B N4	425	60
	53	del	225	Houston Portable	225	30
	54	del	425	Beth S45	425	60
	55	del	450	Beth S45	425	70
SMITH						
Continental Drlg	42	d-e	3200	Idco E2100	2100	250
Delta Drlg	40	del	1500	C-E D2 Type III	784	110
	44	del	2000	S/B N95	1560	160
	64	del	1500	C-E D2 Type III	784	110
	74	del	1000	S-H 7000	480	90
Globe Drlg	7	del	3000	G-D 1100	1500	200
Henley Drlg	6	del	2580	C-E D3	1720	140
Hinton Drlg, W B	5	del	900	S-H 7000	450	100
Lester Drlg, Dan	10	del	1800	Olwl 860	2400	200
Maxwell Herring Drlg	12	del	1500	Wils 150A	2500	150
	18	del	3250	G-D 1100	2700	230
	19	del	2100	G-D 1100	2100	180
Murco Drlg	30	del	2800	Olwl N200B	3000	250
Schlensker Drlg	20	del	1270	Nat 75CA	1270	140
Verna Corp	21	del	550	MC	600	100
	22	del	550	MC U15	600	100
	23	del	550	MC U15	600	100
	24	del	550	MC U15	600	100
	25	del	1000	MC U15	600	100
	27	del	1000	MC U15	600	100
	29	del	1000	MC U15	600	100
	30	del	550	MC U15	600	100
	32	del	1212	Verna U15	500	110
	35	del	1000	Idco 711SJ	1200	140
	37	del	1212	MC U15	550	110
STARR						
Alanco Drlg	1	del	800	Idco H40	500	85
Bawden Drlg, Peter (TX)	7	del	1200	Nat 55	700	115
Cinco Drlg	6	del	1015	MC U15	780	110
Harkins & Co	8	del	1800	C-E C1 Type III	1800	180/5"
San Patricio Corp	6	del	1500	Shaf 800	900	130
Willis Drlg	1	del	1000	Beth B-Line MC450	1000	120
STEPHENS						
Jones Drlg Corp	12	del	1200		1200	100
Lowe Drlg	2	del	475	MC U34	475	60
Sealy & Co	2	del	350	Fail 2500	350	25
Wes-Mor Drlg	2	del		MC U34		60
	6	g-b		MC U34		45
	11	del		Wils Roadair		60
STERLING						
D B Drlg	9	del	410	Schf 5058000	440	85
GCO Drlg	6	del	820	BDW 650M	650	90
	8	del	1000	Nat 370	650	104
McBay Oil & Gas	2	del	3406	Beth S50	3406	80
Robinson Drlg of Texas	5	del	750	MC U15	900	95
Tucker Drlg	2	del	750	C-E GB500	750	100
	5	del	750	C-E GB500	750	100
TMBR Drlg	8	del	700	Nat 50CA	600	105
	26	del	700	G-D 500	700	110
Wes-Tex Drlg	1	del	650	Nat 50A	650	100
	3	del	700	Nat 50A	700	100
	11	del	450	Beth S55	700	100
STONEWALL						
Bandera Drlg	9	del	700	MAC 300	475	75
Hack Drlg	3	del	350	Beth S45E	350	70
Morrison Drlg & Prod	103	del	476	Idco H35	550	85
Wes-Mor Drlg	1	del		MC U15		80
SUTTON						
D B Drlg	22	del	350	Unit U34	450	75
Delta Drlg	73	del	500	S-H 7000	440	90
TMBR Drlg	11	gas	500	MC U15	500	100
	15	gas	700	MC U15	500	105
Wes-Tex Drlg	8	del	335		500	80
TAYLOR						
D B Drlg	21	del	410	S/B N4	460	75
Dixon Drlg	11	del	700	Nat T20	450	75
Douglas Drlg	1	del	700	Nat 50CA	700	100
Hack Drlg	1	del	350	S/B N4	350	70
Lynx Drlg	2	del	500	Idco H30	360	70
	4	del	750	TSM-6000	540	90
Safari Drlg	7	del	480	C-E G42	560	70
TERRELL						
Cactus Drlg Co	1	del	2000	Nat 110M	1650	200
Parker Drlg	89	gas	1600	Nat 1320	1600	230
Rowan Drlg US	12	del	2000	Nat 1320M	2100	180
TERRY						
Dual Drlg	14	del	1560	Olwl 760	1000	150
GCO Drlg	3	del	820	BDW 650M	650	120
Kenai Drlg of Texas	14	del	700	C-E GC500	700	115
Resource Drlg	RD-23	del	1040	Nat 610	1220	120
TMBR Drlg	24	del	1100	G-D 700	1100	140
	31	del	600	MC U15	500	70
THROCKMORTON						
Ashtola Drlg	1	del	800	MC U15	600	75
Megargel Drlg	4	del	350	Beth S45B	275	53
	10	del	750	MC U15	750	70
Tommy's Oilwell Drlg	7	del	800	S-H 5000	476	70
TOM GREEN						
Bandera Drlg	11	del	925	BDW 450T	540	90
Bearden Drlg, Jack E	5	del	1200	Wils 75	900	95
	9	del	1200	Wils Mogul Super 42	900	90
McBay Oil & Gas	1	del	3406	Wils Super 38	3306	50
Mellon Drlg	3	del	750	Beth S50	375	62
Tucker Drlg	1	del	750	S/B N55	750	100
	3	del	350	S/B N45	600	65
	4	del	214	MC U15	450	75
	7	del	375	Beth 560	600	70
	12	del	750	Nat 50A	750	100
TYLER						
Cliffs Drlg	41	del	2800	Nat 1320	2475	250
Diamond M Land Drlg	175	del	2000	MC 1220	2000	250
Sojourner Drlg	7	del	350	MC U15	7500	75
	10	del		MC U15	550	70
UPSHUR						
Exeter Drlg Southern	57	del	1500	C-E D3	1500	160
H & S Drlg	2	del	1700	S/B N95	2145	140
Lester Drlg, Dan	8	del	1850	Olwl 760	1500	160
Maxwell Herring Drlg	17	del	2500	Beth 1500	2400	200
Rainbow Drlg	5	del	2000	Cbot 1200	1200	150
Resource Drlg	RD-31	del	1560	Nat 80B	1835	140
	4	del	1560	Nat 80B	1835	140
Thunderbolt Drlg	52	del	1700	Nat 55	1845	130
Woolf & Magee	2	del	1550	G-D 700	1000	135
UPTON						
Delta Drlg	2	del	1400	G-D 700M	784	125
FWA Drlg	3	del	1250	Wils Super Giant	1040	130
	11	del	1065	Wils Giant	900	110
	17	del	1400	Wils Giant	900	110
Hondo Drlg	6	del	1000	MC U15	700	100
UVALDE						
Dixon Drlg	10	del	900	S/B N46	950	100
VAL VERDE						
Delta Drlg	61	del	1800	Idco Super 711	1640	150
Tri-Service Drlg	11	d-e	3000	MC 1220ED	3000	200
VAN ZANDT						
Cape Drlg	6	del	1500	MIDWAY 750D	800	135
Gibson Drlg	9	del	1030	Wils Mogul 75P	700	90
Wilson Bros Drlg	8	del	1750	Nat 110	1750	160
VICTORIA						
B D K Drlg	6	del	1000	S/B 4610	950	100
	8	del	1000	S/B 4610	750	100
Bilbo Drlg	1	del	500	S/B N4A	500	80/4"
	3	del	900	Crdw KB250	600	80/4"
	4	del	800	Cbot 900	900	115
Continental Drlg	2	d-e	2600	Idco E1700	1700	190
	14	d-e	2000	Idco ED1200	1200	160
Corpus Christi Drlg	6	del	300	S/B 550	450	60
FWA Drlg	29	del	2600	Nat 110	2400	200
Houtech Drlg	103	del	1600	G-D 700	1200	150
	104	del	1600	G-D 700	1200	150
Kelley & Kerr Drlg	KK-3	d-e	2000	OIME SD7	1500	180
PRC Drlg	10	del	1075	Coop LTO700	550	95
Southland Drlg	1	del	700	C-E GB500	700	100
	2	del	1300	S/B 75A	1150	120
	5	del	700	S/B N55	700	100
	9	del	600	S/B N45	600	75
	10	del	1800	Beth 810	1600	170
	11	del	2300	MC A1500	2300	240
	12	del	2300	MC 1500A	2300	240
	14	del	2225	C-E A1500	2500	240
	16	del	1925	S/B N12A	2200	170
WALKER						
Tesoro Drlg	4	del	2600	Nat 1320M	2742	250
WALLER						
Bawden Drlg, Peter (TX)	3	d-s	2100	Nat 110E	1500	160
	4	d-s	2000	Nat 80UE	1000	140
	5	mch	2000	Nat 110M	1500	180
	26	mch	1550	Olwl 76	700	130
Rainbow Drlg	6	del	1600	Cbot 900	900	110
TL Drlg	2	del	2000	S/B N75	1200	140
WARD						
Cactus Drlg Co	59	del	550	S/B N4	454	60
Hillin Drlg	3	del	500	BDW 450T	575	75
	8	del	500	Wils 42 Mogul	400	60
Johnn Drlg	9					
Loffland Bros	117	d-e	3300	MC U1220EBD	3300	250
WASHINGTON						
Haning & Young	101	d-m	1600	Nat 610	750	125
Kelley & Kerr Drlg	KK-2	d-e	2000	OIME SD7	1500	180
WEBB						
Alanco Drlg	2	del	1000	Idco H40	800	100
	3	del	1425	Idco H1000	975	110
Atco Drlg Southern	19	del	1500	Olwl 66	700	105
	50	del	1850	Nat 100HD	750	150
Bearden Drlg, Jack E	6	del	1200	Wils 75	900	95
Cothrum Drlg	1	del	774	C-E 350	636	95
Culver Drlg	3	del	800	G-D 800	800	160
Delta Drlg	17	d-s	2300	C-E C1 Type II	2592	160
Dixilyn-Field Drlg	14	d-e	2200	Olwl 840E	2000	180
Harkins & Co	7	del	1650	Nat 110	1650	160/5"
Kelley & Kerr Drlg	KK-1	d-e	2000	OIME SD7	1500	180
Moran Bros	39	d-s	2600	C-E C1 Type II	1500	200
PRC Drlg	6	del	1790	S/B N75A	1040	140
	7	del	1700	G-D 800M	1040	160
Resource Drlg	16	del	1560	Nat 80B	1835	140
Rio Colorado Drlg	145	del	2000	Nat 110	1650	180
South Texas Drlg	4	del	1000	S/B 1046	750	100
Texas Drlg	2	del	1700	S/B N7	1200	125
	3	del	1700	Nat 50A	1455	125
	5	del	1700	Cbot 1200	1200	170
	6	del	1200	Cbot 900	950	110
	7	del	1700	Cbot 900	900	115
	8	del	2000	Cbot 1200	1200	150
	9	del	1800	C-E D2	1200	140
	10	del	2000	Cbot 1200	1200	150
Williams Drlg of South TX	2	del	1280	Cbot 900	900	105/4"
	3	del	800	Idco BIR8085	950	115/4"
	4	del	800	Idco BIR8085	950	115/4"

TEXAS (Cont'd)

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
WHARTON						
B D K Drlg	1	dsl	1000	Wils Giant	580	85
Bawden Drlg, Peter (TX)	2	d-s	2600	Nat 1320UE	2000	220
Challenger Drlg	36	dsl	650	Nat G45	700	95
FWA Drlg	16	dsl	1350	Wils Mogul 42	730	90
Padre Drlg	6	dsl	500	S/B H4210	400	75
Spartan Drlg	7	d-e	600	Sup 700E	700	100
WHEELER						
Arden Drlg	8	dsl	3400	C-E CE3000	3000	300
Beard Drlg (OK)	3	dsl	1379	MC U10	1029	140
Cliffs Drlg	27	dsl	2600	Nat 1320	2475	250
Continental Drlg	33	d-e	2600	Idco E1700	1700	190
Cothrum Drlg	10	dsl	1500	G-D 1500	2250	240
Grace/T R G Drlg	20	d-e	2200	G-D 1100E	2400	180
Helmerich & Payne Intl Drlg	47	dsl	2475	Olwl M2000	2730	260
Loffland Bros	222	d-e	3300	MC U1220B	2200	280
Noble Drlg	OW-22	e-s	3300	Olwl E2000	3300	250
Parker Drlg	162	dsl	2200	OIME SL1500P	2200	220
Ratliff Drlg	31	dsl	1650	Texas Flange	1650	180
Sharp Drlg	68	d-e	2331	Olwl M2000E	2742	300
Trigg Drlg	7	dsl	1200	S/B N95	1600	200
Unit Drlg & Expl	18	dsl	1000	G-D 700	1300	160
Viersen & Cochran Drlg	18	dsl	3200	Nat 1320UE	3417	250
WICHITA						
Burns L D Drlg	9	dsl	550	Hoop GTXXA	425	65/4"
WILBARGER						
Burns L D Drlg	6	dsl	1360	MC U36A	780	140
WILLACY						
Nicklos Drlg	77	d-e	1600	C-E C1II	1530	160
Padre Drlg	3	dsl	700	RMI	800	100
Willis Drlg	4	dsl	1200	S/B N65	1200	140
WILSON						
Bearden Drlg, Jack E	2	dsl	1500	Wils 75	900	90
WINKLER						
Britton Inds Drlg	2	dsl	1000	Nat [illegible]CA	1000	120
Cactus Drlg Co	63	dsl	580	S/B N4	464	60
Cherokee Drlg & Dev	6	dsl		BDW 450	670	70
Henley Drlg	219	dsl	1650	S/B N46	950	120
WISE						
Bennett Prod Corp	1	dsl	900	MC U15	900	130
M N D Drlg-Northern	51	dsl	660	Nat 50	550	70
	52	dsl	550	MC U15	560	70
	54	dsl	600	MC U15	600	90
	55	dsl	600	MC U15	600	90
	60	dsl	800	MC U15	800	95
	61	dsl	700	MC 36A	600	115
	62	dsl	600	MC U15	600	90
	65	dsl	700	MC U36A	700	120
	66	dsl	700	MC U36A	700	120
	1359	dsl	450	C-E-350	450	60
	5001363	dsl	800	MC U15	800	95
	5001384	dsl	800	MC U15	800	95
WOOD						
Cape Drlg	2	dsl	1000	S/B TR7W	600	85
Gibson Drlg	1	dsl	606	Wils Mogul 42	398	50
	8	dsl	529	Wils 65	380	50
Goldrus Drlg	3	d-e	1700	Olwl E2000	3400	200
Helmerich & Payne Intl Drlg	40	dsl	1650	Olwl 860	1815	200
	79	d-e	2200	Nat 110UE	1500	200
Justiss Oil	28	dsl	700	Olwl 96	1000	150
Thunderbolt Drlg	20	dsl	1150	Wils Mogul	476	80
	53	dsl	1400	Wils 75	950	110
YOAKUM						
Collier Drlg	12	dsl				70
D B Drlg	23	dsl	720	Unit U15	720	105
Henley Drlg	8	dsl	2580	C-E D3	1720	140
Hillin Drlg	9	dsl	600	Idco H40	600	80
Moran Bros	37	dsl	1000	Nat 610	780	120
Norton Drlg	1	dsl	450	Wils 65P	850	100
	2	dsl	450	Wils Mogul 42	650	70
Sharp Drlg	62	dsl	1132	C-E D3	1272	140
Sitton Drlg	1	dsl	450	Wils 600	525	65
TMBR Drlg	2	dsl	350	Weis W45	450	70
	17	dsl	350	MC U15CA	500	90
Verna Corp	2	dsl	600	S/B N55	800	125
YOUNG						
Burns L D Drlg	8	dsl	444	MC U342	350	75
E & H Drlg	5	g-l	550	Wils Giant	550	75
	6	dsl	600	Wils Mogul	350	65
	7	dsl	500	Nat T32	350	65
Franklin Drlg	1	dsl	300	G-D 1500	300	15
	2	dsl	400	G-D	400	25

TEXAS (Cont'd)

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
YOUNG						
Megargel Drlg	16	dsl	500	Shaf S6000	500	80
Tommy's Oilwell Drlg	6	dsl	476	Wils 550		55
Wes-Mor Drlg	10	dsl		MC U15		75
ZAPATA						
Atco Drlg Southern	18	d-e	2000	Nat 80UE	1000	150
	57	d-e	1600	Nat 610UE	800	120
Blocker Drlg-Alice	9	dsl	1115	Idco H1000	950	100
Delta Drlg	94	d-s	2000	C-E D3 Type II	2592	160
Harkins & Co	2	dsl	1500	S/B N95	1500	140
	6	dsl	1260	S/B N75A	1260	125
Loffland Bros	88	d-e	2160	MC U712	2400	160
Magee-Poole Drlg	9	dsl	2350	Cbot	1500	160

UTAH

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
UNDESIGNATED						
Bawden Drlg Ltd, Peter	21E	d-s	2000	C-E C1		200
Penrod Drlg	20	dsl	2600	Nat 1320M	1950	250
	102	dsl	1600	Nat 610M	984	160
CARBON						
Nicor Drlg	46	o-1	2000	C-E C1E	1500	210
Viersen & Cochran Drlg	7	dsl	1700	MC U712A	1554	180
DAGGETT						
All Western Drlg	2	gas	800	MC U15	700	100
Parker Drlg	163	dsl	1650	OIME SL1500	1650	200
	193	dsl	3200	OIME 3000E	3000	350
DUCHESNE						
Grace-Bomac Drlg	91	dsl	1500	Nat 80B	1500	160
Nicor Drlg	60	dsl	1350	Nat 55M	700	150
Olsen Drlg	2	dsl	1250	Nat C50A	1000	100
	5	dsl	6015	Crdw L350	500	75
Parker Drlg	117	gas	2000	Nat 110	2000	220
Rio Grande Drlg	2	dsl	1000	Nat 80B	1500	160
TWT Expl	51	dsl				56
	55	dsl				80
	57	dsl				170
	58	dsl				140
	59	dsl				120
Viersen & Cochran Drlg	13	dsl	1850	Nat 80B	1500	180
W E S Corp	7		1000	Wils Giant	1000	120
	51	dsl				50
	55	dsl				120
GARFIELD						
Kenting Drlg	20-E	d-e	2400	MC U814 EC	2000	200
Loffland Bros	58	d-e	1600	Nat 80B	2000	150
GRAND						
Nicor Drlg	57	dsl	1060	Nat T45	550	106
Veco Drlg	9	dsl	1200	Idco 725	750	110
IRON						
Grace-Bomac Drlg	93	d-e	3645	Nat 1320UE	2000	250
MILLARD						
Montgomery Drlg	31	dsl	2000	Nat 110UE	2700	180
MORGAN						
Anderson-Myers Drlg	17	dsl	2300	Nat 110	2300	220
Exeter Drlg Northern	43	dsl	2250	C-E C Type III	2250	200
RICH						
Grace-Bomac Drlg	44	dsl	1500	G-D 800	1500	160
Westburne Drlg	66	dsl	1200	G-D 1100E	1500	200
SAN JUAN						
Arapahoe Drlg	2	g-b	300	Nat T32	320	80
Bayless Drlg	1	dsl	1500	Idco H1000	950	100
	5	dsl	1500	Coop LTO550	550	85
Brinkerhoff-Signal	76	dsl	800	G-D M500	800	100
Coleman Drlg	2	dsl	1100	Idco H40D	638	80
	3	dsl	900	Idco H44CSC	636	80
	4	dsl	1300	S/B MODN46	930	100
Energy Search Drlg	1	dsl	1500	Cbot 900	900	100
Forwest	6	d-s	2600	Nat 110UE	2000	200
Four Corners Drlg	5	dsl	1500	Crdw KB500	700	80
	8	dsl	1500	Crdw KB500	750	80
Parker Drlg	118	d-e	1650	Nat 80B	1650	200
SEVIER						
Grace-Bomac Drlg	56	dsl	2250	G-D 1100M	2250	200
SUMMIT						
Brinkerhoff-Signal	73	dsl	1500	Nat 80B	1500	150
	88	dsl	4000	Nat 110UE	2000	200

UTAH (Cont'd)

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
SUMMIT (Cont'd)						
Loffland Bros	8	dsl	2100	MC U914C	2400	200
	186	dsl	2160	MC U914C	2400	200
Manning, R L	31	d-s	1350	C-E D2	700	110
	32	d-e	1600	C-E D3	1000	180
	33	d-e	1850	C-E C1	1500	200/5"
	35	d-e	2400	C-E C1	1800	200/5"
Noble Drlg	N-116	e-e	3000	Nat 110UE	3000	200
	OW-862	dsl	2400	Olwl 860	2400	180
Norton Drlg	9	d-e	1350	G-D 110E	1500	200
Parker Drlg	171	dsl	1650	OIME 1500P	1650	200
	173	dsl	1650	OIME 1500P	1650	200
	183	dsl	1650	OIME 1500P	1650	200
Transcontinental Drlg-Denver	41	dsl	2450	G-D 1100	2925	180
Viersen & Cochran Drlg	11	dsl	2800	Nat 110	2400	200
UINTAH						
Brinkerhoff-Signal	85	dsl	550	Nat 370	800	90
	86	dsl	1000	Nat 80B	1500	160
Loffland Bros	236	dsl	1260	MC U15	1000	100
Manning, R L	10	dsl	720	Olwl 660	720	100
	23	dsl	800	S/B N45	740	75
Nicor Drlg	66	dsl	2000	MC U712A	1200	160
Parker Drlg	177	dsl	1650	OIME SL1500	1650	165
Roden Drlg, J B	5	dsl	650	C-E GB350	650	105
Shelby Drlg	53-E	d-e	1000	Nat 370ESCR	700	100
TWT Expl	56	dsl				120
W E S Corp	58	dsl				140
UTAH						
Loffland Bros	221	dsl	2800	MC U1220AE	3000	250
WAYNE						
Loffland Bros	1	dsl	1290	MC U40	1440	130

WASHINGTON

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
BENTON						
Brinkerhoff-Signal	32	dsl	1000	C-E GC350	465	80
	70	dsl	550	Crdw KW250	450	65
GRANT						
Brinkerhoff-Signal	53	d-e	2325	Nat 110	2325	200
LEWIS						
Taylor Drlg	4	dsl	1000	Nat 50	750	90

WEST VIRGINIA

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
UNDESIGNATED						
Ray Resources	3	dsl	450	Idco BIR5525	600	60
	4	dsl	450	Idco BIR5525	600	60
	6	dsl	450	Idco DIR7015	700	90
	7	dsl	450	Crdw KB500	700	80
	8	dsl	450	S/B N55	800	100
	9	dsl	450	Idco H35	600	65
BARBOUR						
Union Drlg	15	dsl	1200	Idco BIR5525	425	60
CABELL						
FWA Drlg	13	dsl	275	Wils Giant	300	45
	22	dsl	275	Wils Super 38	300	45
CALHOUN						
Hurt & Assoc, Clint	3	dsl	350	Wils Super 38	350	50
JACKSON						
Hurt & Assoc, Clint	2	dsl	350	Wils Super 38	350	50
	4	dsl	350	Wils Super 38	350	50
Smith Petr, Carl E	4	dsl		C-E GB250T	500	100
	5	dsl		MC NDT336		45
	7	dsl		Idco BIR5525	500	75
KANAWHA						
Smith Drlg	10	dsl	3550	Chal M320	380	50
MASON						
Union Drlg	4	dsl	1200	S-H 6000	340	70
MINGO						
Union Drlg	3	dsl	1200	Idco 650	425	90
PLEASANTS						
FWA Drlg	15	dsl	275	Wils Super 38	300	45
Hurt & Assoc, Clint	1	dsl	350	Wils Mogul 42	500	75
	5	dsl	350	Wils Super 38	350	50
	6	dsl	350	Wils Mogul 42	500	70
	7	dsl	350	Kremco K800	500	75

WEST VIRGINIA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
ROANE						
Hurt & Assoc, Clint	8	dsl	350	Kremco K600	500	75
UPSHUR						
Union Drlg	1	dsl	1200	Crdw KM250	425	90
	5	dsl	1200	Crdw 350	380	80
	9	dsl	1200	Cbot Exp III	425	90
WIRT						
FWA Drlg	23	dsl	275	Wils Super 38	300	60
Ray Resources	14	dsl		Nat T20	600	65

WYOMING

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED						
Baltic Drlg	1	dsl	870	Sup 700	800	105
Dixilyn-Field Drlg	38	d-e	3720	Nat 110UE	2000	180
Penrod Drlg	23	dsl	2800	Nat	1950	250
	115	dsl	1600	Nat 1625ME	3000	300
ALBANY						
Barnhart Drlg	4	dsl	350	G-D 15W	350	15
BIG HORN						
Anderson-Myers Drlg	6	dsl	1800	C-E GB800	1800	150
Barnhart Drlg	2	dsl	600	Nat T20	350	50
	3	dsl	600	Idco H35	350	60
Roden Drlg, J B	6	dsl	750	Nat CA75	750	130
Simmons Drlg	41	dsl	350	Hycalog HH6000	350	68
CAMPBELL						
Anderson-Myers Drlg	9	dsl	1200	Nat 55	1200	120
Apollo Drlg	6	dsl	1020	Olwl 76	1020	120
	23	dsl	1100	Nat 50A	810	90
Atco Drlg	8	dsl	1230	C-E A550	1230	120
	54	d-e	1800	Nat 610UE	1800	120
Brinkerhoff-Signal	5	dsl	1500	Nat 80	1500	150
	21	dsl	1040	C-E GC500	1040	115
Burris Drlg	119	dsl	450	MAC 400	500	105
Cyclone Drlg	1	dsl	800	MC U15	800	90
	2	dsl	800	Beth M58	800	120
	3	dsl	1250	MC U30	1250	150
	4	dsl	800	MC U15	800	90
	5	dsl	800	Beth M56	800	120
	6	dsl	800	Nat 50A	800	100
Exeter Drlg Northern	3	dsl	550	Nat 50A	750	95
	7	dsl	700	S/B N75	1000	125
	8	dsl	500	S/B N7	750	95
	10	dsl	500	S/B N55	750	105
	20	dsl	500	C-E GC500	750	110
	21	dsl	550	MC U15	720	95
	30	dsl	750	C-E D2	1100	125
	35	dsl	500	MC U15	750	95
	36	dsl	450	Beth M56	750	110
	38	dsl	500	MC U15	750	95
Grace-Bomac Drlg	28	dsl	1010	C-E GA500	750	100
	45	dsl	1500	G-D 800M	1500	180
	53	dsl	1500	Nat 80B	1500	180
Nicor Drlg	61	dsl	1550	Nat 610	750	120
Transcontinental Drlg-Denver	38	dsl	1750	G-D GD800	1838	150
	40	dsl	1200	Olwl 76	1224	125
	53	dsl	810	Nat 50A	980	90
	55	dsl	810	Olwl 76	980	120
True Drlg	17	dsl	1350	Nat 50A	1000	120
Westburne Drlg	60	dsl	750	Nat 50A	850	110
	70	dsl	700	Nat 50A	700	100
CARBON						
Anderson-Myers Drlg	1	dsl	680	Nat T32	450	70
Brinkerhoff-Signal	3	dsl	1000	Nat 55	1000	120
Exeter Drlg Northern	41	dsl	1000	G-D 700	1100	125
Manning, R L	24	dsl	880	S/B N75	980	110
Shelby Drlg	11	dsl		Idco 35ESCR		100
	51-E	d-e	1000	Idco 725ESCR	750	110
Simmons Drlg	48	dsl	350	Hycalog HH6000	350	68
CONVERSE						
Atco Drlg	27	dsl	730	Beth C50	730	90
Brinkerhoff-Signal	14	dsl	1000	Nat 55	1000	125
Enopco	3	dsl	2000	Nat 80B	1800	175
Exeter Drlg Northern	9	dsl	750	S/B N75	1100	125
	18	dsl	500	Nat 50A	750	95
	39	dsl	500	MC U15	750	95
Grace-Bomac Drlg	43	dsl	1000	G-D 700M	1000	125
	59	dsl	1500	Nat 80B	1500	160
Harpel Drlg	3	dsl	1400	Idco H725	900	100
Helmerich & Payne Intl Drlg	38	dsl	1230	Nat 80	1365	160
Kenai Drlg West Coast	26	dsl	1000	Wils Atlas	1150	140
	35	dsl	800	Nat CA75	1150	140

WYOMING (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
CONVERSE (Cont'd)						
Loffland Bros	163	dsl	1260	Nat 80B	1500	160
	234	dsl	1400	MC U40	1600	130
Manning, R L	5	dsl	1290	C-E GB800	1290	140
CROOK						
Brinkerhoff-Signal	2	dsl	875	MC U36A	600	90
Exeter Drlg Northern	34	dsl	500	MC U15	750	95
	37	dsl	500	G-D 700	1100	125
Gallagher Drlg	6	dsl	520	Crdw O	970	120
True Drlg	15	g-lp	1300	Nat 50A	1000	115
	18	dsl	350	C-E GB250T	350	65
FREMONT						
Anderson-Myers Drlg	5	dsl	1000	C-E GB500	820	100
	15	dsl	1800	S/B N75A	1800	140
Atco Drlg	2	dsl	2000	Nat 80B	1800	160
	12	dsl	1800	Nat 80B	1800	160
Challenger Drlg	25	dsl	300	Nat T20	600	50
Elenburg Expl	11	dsl	430	Elenburg 6000	430	60
Forwest	2	d-s	2600	Idco E2100	1800	220
Grace-Bomac Drlg	24	dsl	2250	Nat 110M	2250	200
Loffland Bros	223	dsl	1260	MC U15	1000	100
Manning, R L	12	dsl	700	Olwl 66	550	110
	25	dsl	1000	S/B N75	1300	115
Quarles Drlg	24	dsl	2700	G-D 1500E	2000	300
	25	d-e	4000	C-E C3	3000	300
Shelby Drlg	12	d-e	1600	G-D 1100ESCR	2000	200
Trigg Drlg	6	d-e	2400	MC U914E	2400	250
Westburne Drlg	58	dsl	310	Nat T32	275	70
	69	dsl	1400	Nat 1320M	1600	180
HOT SPRINGS						
Anderson-Myers Drlg	10	dsl	670	Nat T32	800	85
	11	dsl	1200	Nat 55	1200	130
Burris Drlg	117	dsl	800	MAC 400	500	105
Harpel Drlg	6	d-e	2000	C-E D2	1000	140
Shelby Drlg	10	dsl		Sup 400ESCR		85
Westburne Drlg	72	dsl	720	Nat T32	380	75
JOHNSON						
Brinkerhoff-Signal	57	dsl	1560	Nat N80B	1560	160
Harpel Drlg	4		1400	S/B N46	900	120
Manning, R L	34	d-e	1600	C-E D3	1000	180
LARAMIE						
Atco Drlg	56	d-e	1800	Nat 80UE	1800	160
Exeter Drlg Northern	42	dsl	375	Nat T32	460	78
LINCOLN						
Brinkerhoff-Signal	7	dsl	1500	Nat 80B	1500	150
	40	dsl	2400	Nat 130UE	3000	250
Dixilyn-Field Drlg	33	d-e	1860	Olwl 940E	2000	200
	36	dsl	2000	Nat 110UEV	2000	180
Exeter Drlg Northern	29	dsl	1200	G-D 800	1125	150
Loffland Bros	60	d-e	1800	MC U712A	2000	170
	89	d-e	2100	MC U1220EB	2400	250
	97	d-e	3300	MC U1220EB	3300	300
	119	d-e	4000	C-E CE3000 Type II	3300	350
	184	dsl	2160	MC U712A	2400	150
	325	dsl	2160	G-D 2100	2400	250
Lord Drlg	2	dsl	2200	Olwl M860	1650	180
Manning, R L	29	dsl	800	C-E GB500	934	90
	30	d-e	1600	C-E D3	1000	180
Parker Drlg	92	dsl	1650	Nat 100M	1650	160
Rio Grande Drlg	3	dsl	1300	Nat 1320M	2300	250
	10	d-e	1300	Nat 1320UE	1195	250
True Drlg	24	dsl	1400	MC U914C	2400	220
NATRONA						
Brinkerhoff-Signal	17	dsl	1560	Nat 80B	1560	140
	56	d-e		C-E A110E	2700	180
	66	dsl	1300	G-D 1100	1500	180
Burris Drlg	112	dsl	1500	G-D 1100	1500	200
Dixilyn-Field Drlg	31	d-e	5580	Nat 1320UE	2000	250
	32	dsl	2300	Nat 130	2331	250
	34	d-e	3720	Nat 1320UE	2000	250
Harpel Drlg	5	dsl	1250	S/B N42	700	85
Loffland Bros	40	dsl	1680	S/B N95	2000	160
	70	d-e	3300	MC U1220EB	2200	250
Parker Drlg	118	dsl	1650	Nat 100M	1650	200
Signal Oilfield Serv	1	dsl	550	Cbot 750	700	85
	27	dsl	1025	Cbot 600	750	90
	28	dsl	735	Cbot 600	750	90
West Wind Drlg	55					
NIOBRARA						
Brinkerhoff-Signal	82	dsl	1500	G-D 700M	800	125
Exeter Drlg Northern	17	dsl	500	Nat 50A	750	95
PARK						
Atco Drlg	25	dsl	730	Idco H525	730	95
Barnhart Drlg	1	dsl	700	Idco H525	575	85
PARK (Cont'd)						
Manning, R L	8	dsl	850	C-E GA500	850	90
	15	dsl	700	Nat 55	700	110
	16	g-b	640	Nat T32	458	65
	17	g-b	770	C-E GC500	910	110
	26	g-b	1155	C-E GB800	1365	140
	28	g-b	800	C-E GB350	506	75
Molen Drlg	1	dsl	400	C-E GB250T	350	65
Roden Drlg, J B	1	dsl	636	C-E GB350	640	85
Wyoming Well Serv	21	dsl	500	Idco H35	318	50
	24	dsl	300	Crdw 200A	318	45
	30	dsl	300	Crdw 200A	318	45
SHERIDAN						
Burris Drlg	114	dsl	1500	G-D 1100	1500	200
Parker Drlg	124	dsl	1650	Olwl 2000E	1650	250
SUBLETTE						
Brinkerhoff-Signal	12	dsl	1000	Nat 55	1000	120
Exeter Drlg Northern	31	dsl	1000	G-D 800	1650	150
Helmerich & Payne Intl Drlg	81	d-s	2200	Nat 110UE	1500	200
Montgomery Drlg	5	d-e	2700	Nat 1320UE	3645	250
Norton Drlg	6	dsl	750	Wils 75	900	130
	10	dsl	750	G-D 700	1070	150
Roden Drlg, J B	7	dsl	350	BDW 450T	520	80
True Drlg	9	dsl	1200	MC U40	1200	150
	14	dsl	1200	Nat 50A	1200	120
	16	g-lp	1300	Nat 50A	1000	110
	25	dsl	2100	MC U914C	2100	220
Viersen & Cochran Drlg	9	dsl	2150	Nat 110	2400	200
SWEETWATER						
Anderson-Myers Drlg	18	dsl	800	Nat T45	800	100
Apollo Drlg	16	dsl	1155	Nat 80B	1220	125
Brinkerhoff-Signal	69	dsl	1000	Nat 110	1500	180
Dixilyn-Field Drlg	40	d-e	1860	Nat 80UE	1000	150
Exeter Drlg Northern	11	dsl	700	G-D 700	1000	125
Manning, R L	7	g-b	750	C-E G500	750	85
	9	dsl	650	C-E GA500	650	85
	22	dsl	1180	C-E A550	1180	110
Montgomery Drlg	32	d-e	2700	Nat 110UE	2000	180
Rio Grande Drlg	28	dsl	1000	S/B N95	2300	180
Roden Drlg, J B	3	dsl	1575	OIME 1500SL	1575	190
Sabre Drlg	2	dsl	671	Wils Mogul 42	671	50
Transcontinental Drlg-Denver	51	dsl	1100	Olwl 76	1300	125
Westburne Drlg	65	dsl	870	Nat T45	400	85
TETON						
Loffland Bros	30	d-e	2160	MC 914EC	2200	200
Montgomery Drlg	44	dsl	2000	Olwl 96	1000	200
Parker Drlg	148	dsl	1000	OIME 750	1000	130
UINTA						
Anderson-Myers Drlg	12	dsl	1500	OIME 1500	1500	170
	14	dsl	1800	S/B N75A	1800	140
Brinkerhoff-Signal	6	dsl	1500	G-D 1100	1500	180
	26	dsl	1170	Nat 55	1170	105
	72	dsl	2000	Nat 1320UE	2000	250
Burris Drlg	111	dsl	1500	G-D 1100	1500	200
Challenger Drlg	27	dsl	300	Nat T12	500	45
Dixilyn-Field Drlg	39	d-e	3720	Nat 110UE	2000	180
	41	d-e	3720	Nat 1320UE	2000	250
Exeter Drlg Northern	24	dsl	1000	G-D 800	1100	150
	28	dsl	1200	G-D 800	1275	150
	56	dsl		G-D 1100	1650	200
Forwest	1	d-s	2600	Idco E2100	1800	220
Grace-Bomac Drlg	29	dsl	2250	Nat 110M	2250	200
	90	d-e	2730	Nat 110UE	2730	200
Loffland Bros	108	dsl	2160	S/B N12A	2400	250
	214	dsl	1860	MC U40	1600	130
Lord Drlg	1	dsl	2200	Olwl M860	1650	180
	3	dsl	2200	Olwl M860	1650	180
Manning, R L	14	dsl	1700	Nat 110	1500	200/ 5"
	21	dsl	1095	Nat 80B	1365	150
Noble Drlg	132	d-s	3300	Nat 1320UE	3300	250
Parker Drlg	112	dsl	3000	Idco E3000	3000	300
Pruet-Ram-Co	4	dsl	2000	C-E D3	2000	180
Rio Grande Drlg	6	d-e	1350	G-D 1500E	1195	250
	27	dsl	750	S/B N75	1030	145
Transcontinental Drlg-Denver	57	dsl	1100	G-D 800	1300	130
Viersen & Cochran Drlg	8	dsl	1450	Nat 80B	1554	180
	14	dsl	2300	C-E 800A	1554	180
WASHAKIE						
Anderson-Myers Drlg	2	dsl	1200	Nat 55	1200	120
	4	dsl	1200	C-E GA500	1200	110
Exeter Drlg Northern	19	dsl	700	G-D 800	1100	140
Phelps Drlg	22	dsl	770	C-E 370M	550	100
WESTON						
Brinkerhoff-Signal	20	dsl	500	Nat 50A	500	100
L & R Drlg	4	dsl	400	Cbot Rocket	195	30
	6	dsl	318	Cbot 50	318	15/ 3.5"

Drilling Contractors With Rotary Land Rigs in Canada

ADECO DRILLING & ENGR CO LTD 505 Second St SW Calgary Alberta T2P 1N8 Canada 403-266-6291
ARGUS DRILLING-DIV TARO INDS 1580-540 Fifth Ave SW Calgary Alberta T2P 0M3 Canada 403-264-3043
ARROWHEAD DRILLING LTD 710 999 Eighth St SW Calgary Alberta T2R 1J5 Canada 403-245-2817
ATCO DRILLING LTD MUSTANG DIV #700 800 Sixth Ave SW Calgary Alberta T2P 0T8 Canada 403-263-8520
BADGER DRILLING LTD 1180 700 Fourth Ave SW Calgary Alberta T2P 3J4 Canada 403-269-8534
PETER BAWDEN DRILLING LTD 2750 400 Fourth Ave SW Calgary Alberta T2P 0J4 Canada 403-265-1511
BEAVER DRILLING LTD 1117 Suncor Tower 500 Fourth Ave SW Calgary Alberta T2P 2V6 Canada 403-265-6472
BLOCKER CANADA LTD 11012 Macleod Trail S Ste 800 Calgary Alberta T2J 6A5 Canada 403-278-6050 403-237-5505
BLOCKER DRILLING 800 Berring Dr Ste 400 Houston TX 77057 713-974-9100
BOW ISLAND DRILLING 700 800 Sixth Ave SW Calgary Alberta T2P 0T8 Canada 403-264-5413 263-1215 955-8722
BRELCO DRILLING LTD #2602 425-First St SW Calgary Alberta T2P 3L8 Canada 403-233-8300
CACTUS DRILLING LTD DIV OCELOT INDS PO Box 1508 500 622 Fifth Ave SW Calgary Alberta T2P 0M6 Canada 403-263-5670
CAN-TEX DRILLING & EXPL LTD 1520 Royal Bank Bldg 335 Eighth Ave SW Calgary Alberta T2P 1C9 Canada 403-265-8441
CANADIAN WORLDWIDE ENERGY LTD 500 Fifth Ave SW Chevron Plaza Ste 300 Calgary Alberta T2P 3L5 Canada 403-261-5661
CENTENNIAL DRILLING LTD 1007-16th Ave NW Calgary Alberta T2M 0K7 Canada 403-282-9552, 9602
CHALLENGER DRILLING 401-1035 Seventh Ave SW Calgary Alberta T2P 3E9 Canada 403-269-3121
CORUNNA PETR LTD 264 Paget St PO Box 640 Corunna Ontario N0N 1G0 Canada 519-862-5505
CROWN DRILLING LTD PO Box 1390 Trans-Canada Hwy Virden Manitoba R0M 2C0 Canada 204-748-1714
ENSIGN DRILLING LTD PO Box 1160 5109-63 St Lloydminster Alberta S9V 1G1 Canada 403-875-4942
GUTHRIE McLAREN DRILLING LTD 1760 717 Seventh Ave SW Calgary Alberta Canada 403-455-3191
HI TOWER DRILLING Box 6650 Station D 321 Sixth Ave SW 16th Floor Calgary Alberta T2P 2V8 Canada 403-231-1211
JADE DRILLING LTD 5825 95th St Edmonton Alberta T6E 3L4 Canada 403-437-2930
JOMAX DRILLING LTD 1700 505 Third St SW Calgary Alberta T2P 3A8 Canada 403-265-5312
KCA DRILLING LTD KCA House 227 Shepherds Bush Rd London W6 7AS England 01-741-4811
KENTING DRILLING CO LTD #1910 800-Fifth Ave SW Calgary Alberta T2P 2P9 Canada 403-298-5250
LEMKCO DRILLING CO LTD 6767 Golden West Ave Red Deer Alberta T4P 1A7 Canada 403-342-4200
LOFFLAND BROS CO PO Box 2847 Tulsa OK 74101 918-622-9330
MONTGOMERY DRILLING CANADA LTD 960-700 Fourth Ave SW Calgary Alberta T2P 3J4 Canada 403-290-1644
NABORS DRILLING LTD 324 Eighth Ave SW 1107 Home Oil Tower Ste 1107 TD Square Calgary Alberta T2P 2Z2 Canada 403-263-6610
PAN ARCTIC DRILLING PO Box 487 Nisku Alberta T0C 2G0 Canada 403-955-7944
PARKER DRILLING CO 8 E Third St Tulsa OK 74103 918-585-8221
PHELPS DRILLING INTERNATIONAL LTD #800 11012 Macleod Trail S Calgary Alberta T2J 6A5 Canada 403-278-6050
PRECISION DRILLING LTD Ste 1010 500 Fourth Ave SW Calgary Alberta T2P 2V6 Canada 403-264-4882
RED ARROW DRILLING LTD 520 304 Eighth Ave SW Calgary Alberta T2P 1C2 Canada 403-264-0695
REGENT DRILLING LTD 12912 125th Ave Edmonton Alberta T5L 3C1 Canada 403-455-2121
ROCKY MOUNTAIN DRILLING LTD 10333 Southport Rd SW #415 Calgary Alberta T2W 3X6 Canada 403-259-6767
S & T DRILLING LTD PO Box 4890 Edmonton Alberta T6E 5G7 Canada 403-955-7011
SEDCO DRILLING DIV BOW VALLEY RESOURCE SERVICES LTD Box 6680 Postal Sta D 1600 321 Sixth Ave SW Calgary Alberta T2P 2V8 Canada 403-231-1161
SHELBY DRILLING LTD 4A 2016-25th Ave NE Calgary Alberta T2E 6Z4 Canada 403-230-3655
SIMMONS DRILLING LTD 600-1177 11th Ave SW Calgary Alberta T2R 1K9 Canada 403-244-5340
SPARTAN DRILLING LTD #236-6715 8th St NE Calgary Alberta T2E 7H7 Canada 403-275-7160
THREE HUNDRED DRILLING LTD 500 1121 Centre St N Calgary Alberta T2E 7K6 Canada 403-230-5565
TRI-CITY DRILLING LTD 14305 120th Ave Edmonton Alberta T5L 2R8 Canada 403-453-3771
UNDERWATER GAS DEVELOPERS LTD PO Box 428 Port Colborne Ontario L3K 1B7 Canada 416-894-1731
WESTBURNE DRILLING CANADA LTD 200 535 Seventh Ave SW Calgary Alberta T2P 0Y4 Canada 403-266-8701

Canadian Contract Rotary Land Drilling Rigs

ALBERTA

UNDESIGNATED

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Argus Drlg Div Taro Inds	1	dsl	320	Nat T32	327	72
	2	dsl	320	C-E 250T	327	65
	3	dsl	320	MC U34	319	60
	4	dsl	320	MC U34	319	60
	5	dsl	1100	Olwl 76	1326	120
	7	dsl	320	Nat T32	327	82
Atco Drlg Mustang Div	31	dsl	815	S/B N45	720	85
	35	dsl	820	Nat T45	820	90
	36	dsl	300	Idco H30AD	300	55
	39	dsl	300	Nat T20	300	60
	40	dsl	700	S/B N45	650	85
	41	dsl	300	Idco H30F	350	60
	42	dsl	650	Idco H35	700	75
	45	d-e	1500	Nat 610E	750	120
	50	dsl	300	Idco H30F	350	60
	53	dsl	735	Nat T45	650	90
	54	dsl	715	Idco H35D	650	75
	55	dsl	500	Idco H35	365	65
Badger Drlg	2	dsl	400	Nat 370	500	72
	4	dsl	400	Sup 400	400	55
	6	dsl	400	Nat 370	500	75
	99	dsl	515	Sup 300	515	60
Bawden Drlg, Peter	1	mch	1000	C-E GB600	500	85
	12	mch	1700	C-E D3	1000	160
	16	mch	1800	C-E D3	1000	120
	17	mch	1100	G-D 500	500	90
	20	mch	1000	G-D 500	500	90
	33	mch	1850	Olwl 860	1400	160
	25E	d-s	2000	C-E C1 Type II	1500	180
Beaver Drlg	1	dsl	300	Nat T32	300	70
	2	dsl	300	Nat T20	300	60
	3	dsl	300	Nat T20	300	60
	4	dsl	300	Nat T32	300	70
	5	dsl	300	Nat T32	300	75

ALBERTA (Cont'd)

UNDESIGNATED (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Beaver Drlg	6	dsl	300	Nat 370	550	85
	7	dsl	550	Nat 370	550	95
	8	dsl	300	Nat T32	300	70
	9	dsl	550	Nat 370	550	95
Blocker Drlg	56					160
	57					140
	59					140
	60					100
Blocker Drlg Canada	7	dsl	770	OIME 750SL	1155	140
Brelco Drlg	1	dsl	800	Olwl 700	900	120
	2	dsl	800	Olwl 700	900	120
	3	dsl	600	Olwl 500	750	90
	4	dsl	600	Olwl 500	750	90
	5	dsl	600	Olwl 500	750	90
	6	dsl	600	Olwl 500	750	90
	7	dsl	800	Olwl 700	900	120
Can-Tex Drlg & Expl	5	dsl	1200	C-E GB800	1200	120
	6	dsl	1400	C-E GB80083	1275	140
	7	dsl	1000	C-E D2	900	120
	8	dsl	820	Olwl 66	820	90
	10	dsl	800	Nat 370	450	80
Centennial Drlg	1	dsl	380	MC 60005	350	55/ 3.5''
	2	dsl	360	C-E 250GA	350	55/ 3.5''
	3	dsl	450	Nat T32	750	85
Challenger Drlg-Calgary	JB9E	d-s	2400	Nat 80UE	2600	150
	2	dsl	650	Nat T45	608	90
	11	dsl	350	Nat T20	466	57
	39	dsl	350	Nat T20	450	5750
	44	dsl	1300	Nat 80B	1850	150
	50	dsl	2000	Nat 110	2385	180
	51	dsl	1630	Nat 110	1980	180
	55	dsl	1180	Nat 100HD	1470	165

ALBERTA (Cont'd)

UNDESIGNATED (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Challenger Drlg Calgary	4-E	d-e	1170	Nat T45	1005	90
	5-E	d-e	1220	Nat 55	1830	125
	8-E	d-e	1500	Nat 80E	2250	145
	10-E	d-s	2600	MC U1220EB	2800	220/ 5''
Concept Resources	1	dsl	500	C-E GA250	300	75
	2	dsl	450	C-E Modified 150	300	65
Hi Tower Drlg	1	d-e	3600	Nat 1320UE	2000	200
	2	dsl	780	Olwl 66	800	95
	10	dsl	1150	Olwl 76	1220	100
	11	dsl	350	Sup 400	540	65
	14	dsl	280	Olwl 52T	350	65
	20	d-e	1800	Olwl 760	1000	150
	3-401	dsl	900	Olwl 66	1020	100
	3-402					
	7-306	dsl	1000	Olwl 66	1100	100
	7-401					
	19-304	dsl	620	Olwl 52T	545	70
	19-401					
	22-301					
	22-401					
Jomax Drlg	1	dsl	800	Olwl 52T	455	26
	2	dsl	800	Olwl 52T	455	26
	3	dsl	800	Olwl 52T	455	26
	4	dsl	1200	Olwl 76A	1275	43
	5	dsl	875	Nat 50A	875	105
	6	d-e	2400	Olwl 760	1600	50
	7	d-e	2400	Olwl 760	1600	50
Kenting Drlg	3	dsl	1000	C-E GC500	1000	120
	4	dsl	720	610	720	115
	5	dsl	350	Sup 400	350	75
	9	dsl	720	Nat T32	720	75
	10	dsl	720	Olwl 66	720	100
	15	dsl	720	Nat 370	720	90

ALBERTA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
UNDESIGNATED (Cont'd)						
Kenting Drlg	18	dsl	800	Nat 50A	800	95/5"
	24	dsl	350	Nat 370	350	90
	27	dsl	1040	Nat 610	1040	120
	28	dsl	700	Nat 370	700	90
	29	dsl	1040	Nat 610	1040	120
	37	dsl	350	Sup 400	700	75
	38	dsl	800	Nat 370		95
	22-E	d-e	2000	Nat 80UE	1000	130
	23-E	d-e	2000	Nat 610E	1000	115
	32-E	d-e	3720	Nat 110UE	2000	180
	39-E	d-e	1100	Nat 370E	1100	100
Loffland Bros	171	d-e	2132	MC U914B	1700	180
Nabors Drlg	4	dsl	2000	Olwl 76	1740	140
Parker Drlg	98	dsl	1500	Nat 100	1000	170
Precision Drlg	1	dsl	350	Idco H30FD Super	350	65
	2	dsl	350	Idco H20AD	350	45
	3	dsl	350	Idco H30 Super 2FD	350	65
	4	dsl	350	Idco H30D	350	72
	5	dsl	350	Idco H525D	350	75
	6	dsl	350	Idco H30	350	65
	7	dsl	350	Idco H30D	400	80
	8	dsl	350	Idco H30D	350	65
	9	dsl	350	Idco H30D	350	75
	10	dsl	350	Idco H35D	350	72
	11	dsl	350	Idco H40PD	350	72
	12	dsl	500	Idco H30D	350	75
	14	dsl	350	Idco H40	500	75
	15	dsl	350	Idco H30FD	350	75
	16	dsl	700	C-E PD650	650	100
Red Arrow Drlg	1	dsl	225	Nat T20	275	60
	3	dsl	225	Nat T20	275	60
	4	dsl	225	RAD 200	275	60
	5	dsl	225	Nat T20	275	60
	6	dsl	225	RAD 200	275	60
	7	dsl	225	RAD 200	275	60
	8	dsl	225	RAD 200	275	60
	10	dsl	225	RAD 200	275	18
Regent Drlg	1	dsl	675	Idco H40	330	75
	4	dsl	840	S/B N4	900	95
	5	dsl	840	S/B N4	820	95
	8	dsl	1800	G-D 1100	2100	150
	9	dsl	1400	S/B N45	1400	140
	10	dsl	830	S/B N4	900	95
	21	dsl	2200	Olwl M2000	2592	200
	22	dsl	830	MC U36A	500	85
	23	dsl	800	S/B N4	820	95
	24	dsl	800	S/B N4	900	95
	25	dsl	1400	S/B N45	1400	140
	28	dsl	1400	S/B N45	1400	140
	29	dsl	350	S/B N4	365	60
	14-E	dsl	2800	Olwl 840E	1800	200
	15-E	dsl	2700	G-D 1500	2000	210
	16-E	dsl	2700	G-D 800E	1000	140
	17-E	dsl	2700	G-D	1000	140
S & T Drlg	1	dsl	1100	Nat 55	1100	110
Sedco Drlg	71	dsl	350	Sup 400	456	60
	77	dsl	375	Sup 400	456	60
	79	dsl	318	G-D 3000	318	40
	80	dsl	375	Shaf 6000	456	60
	81	dsl	375	Sup 400	318	60
	82		375	Sup 300	318	45
	84	dsl	320	Sup 300	318	45
	85		300	Sup 300	318	45
	86	dsl	175	Kremco K600D	450	50
	87	dsl	300	Crdw L	318	40
	88	dsl	350	Crdw S350	350	55
	89	dsl	350	Idco H30D	318	50
	91	dsl	330	C-E GB250	456	65
	95	dsl	300	Sup 400	456	60
	96	dsl	300	Idco H25	318	45
	97	dsl	300	Nat T32	456	60
	99	dsl	350	C-E GA250	456	65
	93-E	d-e	375	Sup 400	210	65
Shelby Drlg	1	dsl	319	Coop 300DD	318	50
	2	dsl	319	Coop 300DD	300	50
	3	dsl	319	Cbot 1287	475	65
	8	dsl	1200	OIME 750SL	1200	140
Simmons Drlg	8	dsl	450	Troy 600	700	100
	11	dsl	350	Hycalog HH6000	350	68
	12	d-e	1200	G-D 500E	700	90
	19	dsl	575	Troy M600	535	75
	25	dsl	350	Mac 300	350	60
Spartan Drlg	2	d-e	700	Sup 700E	700	10
	3	d-e	550	Sup 400E	400	75
	14	d-m	500	Sup 300	300	55
	20	d-e	600	Olwl 500E	500	90
	22	d-m	700	Nat 370	600	90
	24	d-m	380	Sup 300	300	55
	44			Nat T8		
Tri-City Drlg	1	dsl	250	Fail 2500	200	30
	2	dsl	300	MC U34	3000	60
	3	dsl	250	Fail 2500	200	30
	4	dsl	300	Fail Stratmaster 90	280	50
	5	dsl	250	Fail 2500	210	30
	6	dsl	250	Fail 2500	210	30
UNDESIGNATED (Cont'd)						
Tri-City Drlg	7	dsl	250	Fail 2500	210	30
	9	dsl	300	Sup 300	300	45
	10	dsl	300	Sup 300	300	45
Westburne Drlg Canada	55	d-s	3310	Nat 1320UE	3310	220
Westburne Drlg Canada	64	dsl	1680	MC U914C	1680	180
	65	dsl	520	Nat T45	460	85
	67	dsl	1725	Olwl 96	1725	200
	68	dsl	1950	MC U1220D	1950	200
	69	dsl	1950	Nat 1320M	1950	200
	70	dsl	1050	Nat 50A	700	85
	71	dsl	1560	Olwl 860	1560	180
	72	dsl	870	Nat T32	360	75
AIRDRIE						
Arrowhead Drlg	C-1	dsl	1040	Nat 610	1040	120
ALDERSYDE						
Arrowhead Drlg	C-9	dsl	1040	Nat 610	1040	120
BEZANSON						
Nabors Drlg	23-E	d-e	1600	C-E D2	1600	140
BONNYVILLE						
Canadian Worldwide Energy	1	dsl	456	Fail 2500	304	30
Ensign Drlg	1	dsl	440	Cbot 42	290	110
	2	dsl	440	C-E	440	19
BRAZEAU						
Adeco Drlg & Engr	2	dsl	380	OIME SD3	365	85
BRAZEAU RIVER						
Nabors Drlg	16	dsl	2000	C-E A800	1740	150
BUFFALO LAKE						
Guthrie McLaren Drlg	3	dsl	680	Nat 50CA	600	100
CALGARY						
Loffland Bros	72	dsl	1700	MC U914	2880	200
CAROLINE						
Blocker Drlg Canada	6	dsl	1000	OIME 1000SL	1500	160
CARSTAIRS						
Westburne Drlg Canada	42	dsl	360	Nat T20	360	55
CHER-HILL						
Bow Island Drlg	39	dsl	278	W-N 2000	175	30
CLIVE						
Cactus Drlg	11	dsl	350	MC U34	350	65
COLEMAN						
Montgomery Drlg Canada	49	d-e	2000	Nat 110E	2000	200
COLT						
Nabors Drlg	24-E	d-e	2000	C-E Electrohoist 2C	2925	180
CORONATION						
Jade Drlg	1	dsl	450	Wils Super 38	300	36
CROSSFIELD						
Rocky Mountain Drlg	3	dsl	1650	Nat 80	1650	150
S & T Drlg	3	dsl	1200	Nat 55	1200	115
	6	dsl	1200	Nat 610	1200	11.5
CYNTHIA						
Guthrie McLaren Drlg	11	dsl	450	Sup 500	450	70
DEVON						
Westburne Drlg Canada	24	dsl	360	Nat T32	360	70
DRUMHELLER						
Bow Island Drlg	41	d-e	300	W-N	300	50
EDSON						
Arrowhead Drlg	C-5	dsl	1560	Nat 80B	1560	150
Loffland Bros	36	dsl	2000	MC U914C	2880	200
S & T Drlg	7	dsl	1200	Nat 610	800	10.5
EUREKA RIVER						
Westburne Drlg Canada	14	dsl	1080	Nat 50A	1080	95
EVI						
Phelps Drlg Intl	18	dsl	500	TSM 6000	450	75
FERRIER						
Phelps Drlg Intl	24	dsl	770	Nat 370M	550	100
FORT McMURRAY						
Westburne Drlg Canada	30	dsl		Kutryk KS1		30
FOX CREEK						
Bow Island Drlg	47	dsl	278	Nat T12	278	50
Guthrie McLaren Drlg	9	dsl	1940	OIME 1500	1940	180
GRAND FORKS						
Cactus Drlg	8	dsl	350	MC U34	350	65
GRANDE PRAIRIE						
Bow Island Drlg	40 53	dsl	278	W-N 2000	175	30
Cactus Drlg	28	dsl	1200	S/B N75	1200	125
Loffland Bros	198	dsl	1400	MC U914A	1599	180
Nabors Drlg	19-E	d-e	2000	C-E CI	3900	200
Rocky Mountain Drlg	4	dsl	1050	Unit U36A	1050	100
Westburne Drlg Canada	4	dsl	1040	C-E GC500	1040	110
GRIMSHAW						
Westburne Drlg Canada	28	dsl	1440	Nat 55	1440	110
HANNA						
Guthrie McLaren Drlg	12	dsl	325	Sup S400	300	62
HIGH PRAIRIE						
Bow Island Drlg	36	dsl	278	W-N 2000	175	30
HIGH PRAIRIE						
Cactus Drlg	19	dsl	500	MAC 300	500	65
Guthrie McLaren Drlg	2	dsl	300	S/B N4	300	65/3.5"
Rocky Mountain Drlg	2	dsl	1150	G-D 500	700	85
HIGHVALE						
Phelps Drlg Intl	19	dsl	500	TSM 6000	450	75
HINTON						
Bow Island Drlg	48	dsl	278	Nat T12	278	50
Loffland Bros	9	d-e	2000	MC U914	1980	200
INNISFAIL						
Cactus Drlg	7	dsl	700	C-E GB350	700	85
JOFFRE						
Cactus Drlg	4	dsl	350	MC U34	350	65
LAC LA BICHE						
Westburne Drlg Canada	39	dsl	380	Fail 3500	235	35
LACOMBE						
S & T Drlg	2	dsl	350	Nat T32	350	70
LINDBERGH						
Westburne Drlg Canada	33	dsl	360	G-D 3000	235	35
LOCHEND						
Westburne Drlg Canada	10	dsl	1275	Nat 80	1275	130
MANY BERRIES						
Cactus Drlg	9	dsl	350	MC U34	350	65
MED RIVER						
Cactus Drlg	15	dsl	750	C-E GC350	750	65
MIKWAN						
S & T Drlg	4	dsl	700	Nat 50CA	400	80
MILO						
Guthrie McLaren Drlg	7	dsl	300	Nat T32	300	70/3.5"
MINTHAW						
Cactus Drlg	1	dsl	750	S/B N55	750	85
MITCHELL						
Nabors Drlg	21-E	d-e	3200	C-E IIC	3900	200
MITSUE						
Adeco Drlg & Engr	16	dsl	308	Nat T32	312	70
Cactus Drlg	2	dsl	940	Nat 55	940	115
Westburne Drlg Canada	15	dsl	900	S/B N7	720	85
	26	dsl	360	Nat T32	360	70
NIDISI						
Adeco Drlg & Engr	18	dsl	700	OIME Helihoist 500C	1370	75
NISKU						
Cactus Drlg	6	dsl	900	Crdw AO	900	95
KCA Drlg	C1	dsl	1200	Nat 55	612	100
Nabors Drlg	5	dsl	700	Olwl 76	1326	120
OGSTON						
Adeco Drlg & Engr	14	dsl	312	Nat T32	320	70
OTTER LAKES						
Jade Drlg	4	dsl	625	Idco H25	430	75
	5	dsl	500	Idco H30	420	75

ALBERTA (Cont'd)

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
PEACE RIVER						
Jade Drlg	3	dsl	550	Idco H25	380	75
S & T Drlg	5	dsl	1150	Nat T45	800	95
	10	dsl	350	MC U34	350	65
PEMBINA						
Cactus Drlg	10	dsl		Nat T32	700	78
	16	dsl	500	MAC 300	500	65
RAINBOW LAKE						
Rocky Mountain Drlg	1	dsl	650	Nat 370	650	85
RED DEER						
Adeco Drlg & Engr	3	dsl	308	Nat T32	320	70
	15	dsl	365	Nat T45	575	105
	19	dsl	308	Nat T32M	320	82
RED EARTH						
Cactus Drlg	18	dsl	500	MAC 300	500	65
Three Hundred Drlg	Mr Nick	dsl	1200	Sup 700	785	95
REDCLIFF						
Westburne Drlg Canada	40	dsl	360	Fail 2500	180	30
RICINUS						
Cactus Drlg	20	dsl	1200	C-E D2	1200	140
ROCKY MOUNTAIN HOUSE						
Adeco Drlg & Engr	8	dsl	1500	Nat 100M	2340	180
Arrowhead Drlg	C-11	dsl	1560	Nat 80B	1560	150
	C-6	dsl	770	Nat 370	770	90
Bow Island Drlg	31	dsl	278	W-N 2000	175	30
	54					
	55					
Cactus Drlg	5	dsl	1554	Idco Super 711	1554	150
Lemkco Drlg	2	dsl	800	OIME SD3SL	800	100
Montgomery Drlg Canada	42	d-e	2000	Nat 110UE	2000	200
ROCKYFORD						
Adeco Drlg & Engr	1	dsl	312	Nat T20	320	57
SADDLE HILLS						
Cactus Drlg	17	dsl	500	MAC 300	500	65
SAVANNA CREEK						
Arrowhead Drlg	C-8	dsl	1040	Nat 610	1040	120
SLAVE LAKE						
Bow Island Drlg	50					
Cactus Drlg	24	dsl	300	Beth S55	300	60
Westburne Drlg Canada	8	dsl	360	Idco H40D	360	70
SPRINGBURN						
Guthrie McLaren Drlg	4	dsl	375	Sup D500	450	70
STETTLER						
Westburne Drlg Canada	37	dsl	360	G-D 2500	180	35
STRACHAN						
Loffland Bros	93	d-e	2100	MC U1220EB	2400	250
STURGEON LAKE						
Nabors Drlg	15	dsl	1200	C-E A550	884	110
SUFFIELD						
Westburne Drlg Canada	35	dsl	360	Fail 2500	180	30
SUNDRE						
Arrowhead Drlg	C-4	dsl	1040	Nat 610	1040	120
	C-7	dsl	1040	Nat 610	1040	120
Blocker Drlg Canada	9	dsl	770	OIME 750SL	1155	140
Cactus Drlg	26	d-e	2700	C-E D3	500	180
Regent Drlg	11	dsl	2200	Olwl 840E	2592	200
SWAN HEIGHTS						
Bow Island Drlg	35	dsl	3000	W-N 2000	175	30
SWAN HILLS						
Westburne Drlg Canada	12	dsl	720	Nat 370	720	80
SYLVAN LAKE						
Blocker Drlg Canada	10	dsl	770	OIME SD3	770	100
Three Hundred Drlg	Mr Jim	dsl	1200	Nat 370M	900	95
TANGENT						
Arrowhead Drlg	C-2	dsl	770	Nat 370	770	90
Cactus Drlg	3	dsl	350	MC U34	350	65
TWO HILLS						
Guthrie McLaren Drlg	6	dsl	300	Fail 2500A	225	30
	8	dsl	300	Fail 2500A	225	30
VALHALLA						
Adeco Drlg & Engr	12	dsl	312	Nat T32	320	70
VALLEYVIEW						
Arrowhead Drlg	C-10	dsl	1560	Nat 80B	1560	150
VIRGINIA HILLS						
Guthrie McLaren Drlg	5	dsl	750	Nat 50CA	400	85
WAINWRIGHT						
Westburne Drlg Canada	32	dsl	360	Fail 2500	210	30
WATERTON						
Cactus Drlg	25	d-e	3400	C-E C2	2000	200
WILLGREEN						
Cactus Drlg	14	dsl	750	C-E GB500	750	80
WILLISDON GREEN						
Phelps Drlg Intl	23	dsl	770	Nat 370M	550	100
ZAMA						
Guthrie McLaren Drlg	10	dsl	300	Sup D500	450	70
Three Hundred Drlg	Mr Digger	dsl	900	Nat 370M	900	95
ZAMA LAKE						
Westburne Drlg Canada	17	dsl	1080	C-E GB350	720	80

BRITISH COLUMBIA

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
UNDESIGNATED						
Bawden Drlg, Peter	8	d-e	2200	Olwl 860	1400	200
Challenger Drlg-Calgary	15	dsl	800	Idco Sup 711	1300	125
Hi Tower Drlg	4	d-e	3200	Olwl E2000	2000	250
	12	dsl	280	Nat T32	335	65
	21	d-e	3200	C-E D3	1000	150
Kenting Drlg	7	dsl	720	C-E GC500	720	105
Nabors Drlg	3	dsl	1700	Olwl 76	1326	140
	6	dsl	300	Idco H35	300	60
Parker Drlg	94	dsl	1700	Nat 100M	1000	180
Regent Drlg	2	dsl	840	S/B N55	820	95
	3	dsl	840	S/B N4	900	85
	26	dsl	840	Idco H40	330	75
	12-E	dsl	2200	G-D 1500	2592	200
CHETWYND						
Loffland Bros	3	dsl	1850	MC U914A	2880	180
DAWSON CREEK						
Nabors Drlg	9	dsl	2000	Nat 110	2250	180
FERNIE						
Montgomery Drlg Canada	46	d-e	2000	Nat 1320UE	2000	200
FORT ST JOHN						
Adeco Drlg & Engr	6	dsl	1500	Nat 100M	2340	180
Guthrie McLaren Drlg	1	dsl	300	Olwl 52T	400	70
PEMBERTON						
Westburne Drlg Canada	1	dsl	1560	Nat 80B	1560	130
SIKANNI						
Westburne Drlg Canada	22	dsl	1010	Nat 50A	720	85

MANITOBA

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
UNDESIGNATED						
Atco Drlg Mustang Div	32	dsl	300	S/B N4		55
Crown Drlg	2	dsl	784	S-H 5000	476	50
	4	dsl	714	MC U34	362	60
Red Arrow Drlg	2	dsl	225	Nat T12	275	50
	9	dsl	225	RAD 200	275	60
	11	dsl	225	RAD 200	275	60

NORTHWEST TERRITORIES

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
UNDESIGNATED						
Hi Tower Drlg	17-401 17-402	dsl	560	Nat 50A	340	70
Parker Drlg	99-HH/6	dsl	1500	OIME Helihoist 1500	1500	170
Three Hundred Drlg	Ben	dsl	900	Nat 370M	900	95
CAPE NATHURST						
Pan Arctic Drlg	A	d-s	1600	OIME 1000E	1000	130

NORTHWEST TERRITORIES (Cont'd)

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
FORT SIMPSON						
Three Hundred Drlg	Mr Gary	dsl	1200	Sup 700	785	95
KING CHRISTIAN ISLAND						
Pan Arctic Drlg	C	d-s	1600	OIME 1000E	1000	120
LOUGHEED ISLAND						
Pan Arctic Drlg	B	d-s	1000	Nat 80E	800	120
MELVILLE ISLAND						
Spartan Drlg	10	d-e	2000	C-E E	2000	240
NORMAN WELLS						
Kenting Drlg	33-E	d-e	1000	Sup 700E	700	90
RAE POINT						
Adeco Drlg & Engr	4	dsl	1380	OIME Helihoist 1500	2000	170

ONTARIO

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
UNDESIGNATED						
Underwater Gas Dev	6	dsl	200	I-R T5	350	50
LAMBTON						
Corunna Petr	2	dsl	475	Idco 525	636	85
	3	dsl	950	Hoop GXXTA	700	55

QUEBEC

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
UNDESIGNATED						
Regent Drlg	6	dsl	1400	S/B N45	1400	140

SASKATCHEWAN

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
UNDESIGNATED						
Atco Drlg Mustang Div	33	dsl	300	Nat T20	300	55
	34	dsl	300	Nat T20	350	55
	51	dsl	300	Idco H25	350	60
Badger Drlg	1	dsl	300	Idco H30	250	50
Blocker Drlg Canada	3	dsl	770	OIME 750SL	1155	140
Hi Tower Drlg	18	d-e	1800	Olwl 760	1000	150
Red Arrow Drlg	12	dsl	225	RAD 200	275	18
Sedco Drlg	83	dsl	350	Crdw 150A	318	42
	90	dsl	350	MC U34D	456	55
	92	dsl	350	Sup 400	456	50
	94	dsl	300	Crdw L	210	40
	98	dsl	350	Nat T20	456	60
Simmons Drlg	2	dsl	350	Troy 600	350	75
	4	dsl	350	Olwl 52T	350	68
	14	dsl	575	Troy M600	535	75
	15	dsl	350	MC U34	350	600
	22	dsl	350	Troy 300	350	65
	24	dsl	350	Troy 300	350	68
Spartan Drlg	1	d-m	380	Sup 300	300	55
	5	d-m	380	Sup 300	300	59
	13	d-m	380	Sup 300	300	60
	21	d-m	700	Shaf 6000	600	65
	23	d-m	700	Sup 300	300	55
Tri-City Drlg	8	dsl	300	Fail 3500	280	35
DODSLAND						
Jade Drlg	2	dsl	400	Wils Super 38	300	35
S & T Drlg	9	dsl	800	Nat 370	800	85
EASTEND						
Westburne Drlg Canada	34	dsl	360	Idco H25CD	360	45
ESTEVAN						
Bow Island Drlg	32	dsl	278	W-N 2000	175	30
	33	dsl	278	W-N 2000	175	30
GULL LAKE						
Bow Island Drlg	34	dsl	278	W-N 2000	175	30
KINDERSLEY						
Westburne Drlg Canada	31	dsl	360	Fail 2500	275	30
LANCER						
Westburne Drlg Canada	50	dsl	360	Fail 2500	180	30
MACKLIN						
Westburne Drlg Canada	38	dsl	360	Fail 2500	180	30
WEYBURN						
Bow Island Drlg	51					

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International Contract Rotary Land Drilling Rigs

AFRICA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
ALGERIA						
SAIPEM	5893	d-e	3200	Nat 110UE	1600	170
	5894	d-e	3200	Nat 110UE	1600	170
	5895	d-e	3200	Nat 110UE	1600	170
CONGO						
Sonpetrol	E-5	dsl	2200	C-E J1100	1300	140
	GC-1	dsl	1700	C-E GC500	600	100
EGYPT						
Challenger Ltd	18	dsl	900	Cbot 100	1000	120
Forex Neptune and/or Affil	7	dsl	3200	Nat 110	1600	190
	33	d-e	3200	G-D 1100	1500	180
Geoprosco Intl	41	dsl	2200	Idco H900	1100	100
Santa Fe Drlg	64	dsl	1800	Nat 110	1800	160
	69	d-e	2000	Nat 1320DE	3400	200
	73	dsl	2000	Nat 110	1800	160
	75	dsl	2000	Nat 1320M	1800	200
	92	d-e	2800	Nat 1320UE	1400	200
	94	d-e	2250	Nat 110UE	2000	160
	97	d-e	2800	Oiwl E2000	2000	200
	102	d-e	2400	Nat 110UE	1500	160
SAIPEM	5863	d-e	3200	Nat 110UE	1500	170
GABON						
Forex Neptune and/or Affil	4	dsl	1300	Idco H525	500	90
	27	dsl	2600	Idco Super 711	1200	180
LIBYA						
Arab Drlg & Workover	ADWOC-2	d-e	2600	C-E C111	1500	200
	ADWOC3	d-e	2600	C-E C111	1500	200
	37	dsl	1550	Nat 80B	1800	120
	53	dsl	1250	Idco H525	700	90
	54	dsl	1400	Nat 80B	1800	120
	118	dsl	1250	Idco H525	700	90
Challenger Ltd	19	dsl	1300	Nat 80B	1950	150
Deutsche Tiefbohr	T-16	dsl	2000	C-E A800	1000	120
	T-26	dsl	2100	Idco Super 711	1500	160
	T-90	dsl		H-L 6206	400	
	T-91	dsl		H-L 6205	130	

AFRICA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
LIBYA (Cont'd)						
Forex Neptune and/or Affil	2	dsl	2600	Idco Super 711	1600	180
	13	dsl	2500	Idco Super 711	1200	180
	35	d-e	3200	G-D 1110E	1600	180
	41	dsl	1300	Idco H525	640	90
	42	dsl	2000	Nat 80UE	1000	157
	43	d-e	2000	Nat 80UE	1000	157
	44	dsl	3200	Idco Super 711	1600	180
KCA Drlg	83	dsl	2000	MC U36EA	1000	100
	100	dsl	750	Crdw KM250	375	60
	101	dsl	375	Cbot 1058	375	120
	102	dsl	375	Cbot 1058	375	120
	103	dsl	375	Cbot 1058	375	120
Oil Drlg & Expl	7	dsl	2000	Idco Super 711	2000	170
	9	dsl	2000	Idco Super 711	2000	170
Pool-Intairdril	2	dsl	318	Cbot 1287/120	476	50
	3	dsl	318	Cbot 1287/120	476	50
	5	dsl	318	Cbot 1058/120	318	50
	10	dsl	318	Cbot 1058/120	318	50
	22	dsl	400	Idco DIR550	400	65
	32	dsl	600	Cbot 750	600	65
	33	dsl	600	Cbot 750	600	65
	34	dsl	600	Cbot 750	600	75
	204	e-s	2000	Idco ED1200	1000	120
	205	el	2000	Idco ED1200	1000	120
	206	e-s	2000	Idco ED1200	1000	120
Santa Fe Drlg	ADWOC 1	d-e	2600	C-E C111	1500	200
	1					
	3					
	95					
NIGERIA						
Forex Neptune and/or Affil	1	dsl	2600	Idco Super 711	1200	180
	5	dsl	2600	Nat 1105	1600	180

AFRICA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
NIGERIA (Cont'd)						
Forex Neptune and/or Affil	9	dsl	2850	Nat 110	1600	190
	10	dsl	2600	Nat 110	1600	190
	24	d-e	3200	G-D 2100RE	3000	254
	26	dsl	2600	Idco Super 711	1200	180
	49	d-e	3200	G-D 1100E	1500	180
SAIPEM	5838	dsl	2500	Idco H1700	2000	165
	5847	dsl	2130	Idco H1700	1700	165
	5850	dsl	1135	Idco H40	432	60
	5860	dsl	2500	Idco H1700	2000	165
SOMALIA						
Parker Drlg	143	dsl	2000	Nat 110	2250	180
SUDAN						
Parker Drlg	220	dsl	1600	OIME SL1000	1000	150
	105-HH/2	dsl	1200	OIME HH1250	1275	140
	119-HH/10	dsl	1950	OIME HH1500	1700	180
	195-HH/42	dsl	2000	OIME TBA2000	2000	200
TUNISIA						
Blocker Drlg-Alice	10	dsl	825	Idco Hydrair H37ESC	434	75
	18	dsl	1475	Cbot 2346	950	100
Blocker Drlg-Houston	47					200
Forex Neptune and/or Affil	11	d-e	3200	Nat 110UE	1500	190
	36	d-e	3200	G-D	1600	180
SAIPEM	5842	dsl	2250	Idco H1700	1700	165
	5846	dsl	2250	Idco H1700	1700	165
ZAIRE						
Von Rautenkranz Hermann	ITAG-102	dsl	900	Wils Mogul 42		100

ASIA PACIFIC

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
AUSTRALIA						
Oil Drlg & Expl	5	dsl	1100	Idco Super 711	1100	130

ASIA PACIFIC (Cont'd)

AUSTRALIA (Cont'd)

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Oil Drlg Expl	6	dsl	1200	Nat 55	850	100
	8	dsl	350	Idco H35	500	45
	12	dsl	1500	Idco H725	750	100
	15	dsl	2000	Idco H1700	2000	170
	16	dsl	1600	Idco 1200	1600	140
Pool-Intairdril	9	dsl	420	Cbot 1058/160	420	50
	216	dsl		Wils Super 38	350	34
Richter Drlg Pty	2	dsl	1600	Nat 55	900	100
	4	dsl	600	Nat T32	300	60
	5	dsl		Coop 750		100
	9	dsl	2000	Nat 80B	1000	120
	11	dsl		Coop 750	375	100
	14	d-e	2000	Nat 80UE	1000	120
	16	dsl	275	S/B RR550	450	65
Simmons Drlg	SC#1	dsl	350	Hycalog HH6000	350	68

BRUNEI

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Deutsche Tiefbohr	T-41	dsl	1800	Wils 780	780	80

INDONESIA

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Bawden Drlg Intl	6	dsl	1000	Nat T45	550	75
	28	dsl	925	C-E GB350	350	72
	51	dsl	1200	Sup 700	700	100
Deutsche Tiefbohr	T-31	dsl	1000	Wils 780	910	80
Houlder Marine Drlg	1	d-e	1600	Nat 80UE	1000	120
Loffland Bros	56	dsl	900	MC U36A	900	100
	139	dsl	1400	MC U36	900	100
	300	dsl	600	MC U34	500	40
Parker Drlg	115-HH/8	dsl	1200	OIME HH1500	1700	180
	125-HH/13	dsl	1200	OIME HH1500	1700	180
	130-HH/18	dsl	1500	OIME TBA2000	1700	200
	156-HH/35	dsl	2000	OIME TBA2000	2000	200
	160-HH/37	dsl	2000	OIME TBA2000	2000	200
	188-HH/38	dsl	2400	OIME TBA2400	2400	240
	190-HH/39	dsl	2000	OIME TBA2000	2000	200
PT Mafhabor Indonesia	MBI 1	dsl	600	Nat 610	750	120
PT Meta Epsi Drlg	1	dsl	1600	Nat 610	850	120
	2	d-e	1050	HS1500E	1500	150
	3	d-e	1050	HS1500E	1500	150
	4	d-e	2600	S/B NE95A	1800	200
Richter Drlg Pty	7	dsl	1600	Nat 610	750	100

MALAYSIA

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Parker Drlg	106-HH/3	dsl	1600	OIME HH1250B	1275	140

NEW GUINEA

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Bawden Drlg Intl	29	d-e	1400	Nat 80E	1000	120
Parker Drlg	140-HH/28	dsl	1500	OIME TBA2000	1700	200
	146-HH/32	dsl	2000	OIME TBA2000	1700	200

NEW ZEALAND

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Oil Drlg & Expl	17	d-e	2800	Idco E2100	2800	210

PAKISTAN

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Challenger Ltd	61E	dsl	2800	G-D 1100E	1500	200
Deutsche Tiefbohr	T-10	dsl	2700	Nat 110H	1500	160
	T-35	dsl	1600	Coop LTO750	750	100
Little-Deutag	T-35	dsl	1600	Coop LTO750	750	100
Parker Drlg	126-HH/14	dsl	1500	OIME TBA2000	1700	200
Pool-Intairdril	218	dsl		Idco H44	750	85

PHILIPPINES

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
PNOC Energy Drlg	1	dsl	1650		1650	125
	2	dsl	583	Wils Mogul 42	466	50/3.5''
	3	dsl	1100	Idco H725	1100	85
	4	dsl	1350	Nat 610	1100	100
	5	dsl	1350	Nat 610	1100	100
	6	dsl	1350	Nat 610	1100	100
	7	dsl	660	Idco H525	684	80
	8	dsl	2000	C-E D3	2000	125
	9	dsl	1100	Nat 370	730	70
	10	dsl	4000	Idco E2100	2000	210
Richter Drlg Pty	6	dsl	1350	Nat 100	1000	140
	8	dsl	1400	Nat 110M	1100	150

ASIA PACIFIC (Cont'd)

SINGAPORE

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Bawden Drlg Intl	9	d-s	3200	Nat 1320UE	2000	[illegible]
Forex Neptune and/or Affil	45 (Helirig)	d-e	1960	Wils EH120	1100	169

THAILAND

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Deutsche Tiefbohr	T-46	d-e	2600	C-E C2	2000	200
	T-48	d-e	2600	C-E A300	1000	150
Parker Drlg	194-HH/41	dsl	2000	OIME TBA2000	2000	200
	200-HH/44	dsl	2000	OIME TB[illegible]	2000	200

CENTRAL AMERICA

GUATEMALA

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Forex Neptune and/or Affil	30	d-e	3200	G-D	2000	217
	39	dsl	1300	Idco H525	500	90
Helmerich & Payne (Guatemala)	16	d-e	2600	HS1500	1500	180
	45	d-s	3000	Nat 1320UE	2000	250

EUROPE

AUSTRIA

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Preussag Aktiengesellschaft	GH35	dsl	2000	DeMg GH35	1500	165

DENMARK

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Kenting Drlg Serv	21	d-e	2000	Nat 80UE	1000	140/5''

FRANCE

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
COSIFOR	E-350	dsl	1500	C-E 350	[illegible]	90
	N-110	dsl	2500	Nat 110	1500	[illegible]
	610E	d-e	1600	Nat 610E	[illegible]	[illegible]
Forex Neptune and/or Affil	3	dsl	1250	Idco H525	700	90
	14	dsl	1600	C-E GC500	500	108
	16	d-e	2900	C-E 1100DE	1500	180
	17	dsl	2000	C-E A800	800	120
	18	dsl	900	Idco H40	500	90
	19	dsl	1650	Nat 55	780	108
	22	d-e	3200	G-D 2100	2300	254
	28	dsl	1200	Idco H25	250	44
	29	dsl	450	Nat 55	700	108
	31	dsl	3200	Idco Super 711	1200	180

GREECE

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
SAIPEM	5889	d-e	3200	Idco E3000	3000	300

ICELAND

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Orkustofnun State Drlg Contrs	DOFRI	dsl	1350	Olwl 52T	320	73
	GLAUMUR	dsl	290	Fail 2000	290	37/2.88''
	JOTUNN	d-e	1500	G-D 700E	750	140
	NARFI	dsl	580	Fail 3000	290	60/3.5''
	YMIR	dsl	180	May 1000	180	18/2.37''

ITALY

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Pool-Intairdril	211	e-s	1300	Idco 1700	2000	170
	212	e-s	1200	Idco 1200	1000	125
SAIPEM	5803	dsl	1400	Idco H711	885	114
	5829	d-e	2000	C-E D3	1000	120
	5832	d-e	3200	Idco E2100	2000	200
	5833	d-e	3200	Idco E2100	2000	200
	5836	dsl	2600	Idco 1350S	1950	180
	5840	sl	2600	Idco H1700	1700	165
	5844	dsl	1000	Idco H30		40
	5852	d-e	880	Idco E525	625	60
	5855	dsl	1800	Idco H1200	1740	130
	5856	dsl	1700	Idco H1200	1740	130
	5858	dsl	1135	Idco H40	432	60
	586[illegible]	d-e	3200	C-E C3 Type II	3000	300
	58[illegible]2	d-e	2600	Nat 1625 DE	3000	250
	5[illegible]88	d-e	3200	Nat 1625 DE	3000	250
	5891	d-e	3200	Nat 110UE	1600	170
	5892	d-e	3200	Nat 110UE	1600	170
	5898	d-e	2600	Idco HE1700	1600	165
	5[illegible]	dsl	1400	Crdw 03	1050	104

NETHERLANDS

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Deutsche Tiefbohr	T-19	dsl	2800	Nat 80BE	1000	140
	T-27	d-e	3200	Nat 130	1625	200
	T-32	dsl	420	Idco H35KD	300	30

EUROPE (Cont'd)

NETHERLANDS (Cont'd)

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Deutsche Tiefbohr	T-40	d-e	2600	Nat 80B	1000	150
Kenting Drlg Serv	34	d-e	1600	Nat 610UE	750	115

PORTUGAL

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Boldon Drlg	81	d-e	1800	Nat 80UE	2000	140/5''

SPAIN

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Compania Gen De Sondeos SA	G450	dsl	1050	C-E G450	450	100
	Skytop RR 650	mch	1000	S/B 650	575	20
	110	dsl	2700	Nat T2029	1700	197
	800	dsl	2400	G-D	1470	148
	1320	d-e	2600	Nat 1320UE	2500	200
Sonpetrol	GD-2	dsl	1100	G-D 500	600	100
	N-7	dsl	3200	Nat 1625	3000	250
	N-8	dsl	2000	Nat 80UE	1000	140
	N-9	el	2600	Nat 110	2750	160

SWITZERLAND

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Deutsche Tiefbohr	T-7	dsl	1300	Nat 80B	1000	110

TURKEY

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
KCA Drlg	71	dsl	1800	Nat 80B	1000	120
	73	dsl	1800	Nat 80B	1000	120

UNITED KINGDOM

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Boldon Drlg	21	dsl	640	Nat T20	290	45
	22	dsl	640	Nat T20	335	55
	23	dsl	640	Nat T20	280	40
	61	d-e	1200	Olwl 660E	700	100/5''
Houlder Marine Drlg	2	d-e	1600	Sup 700E	1000	90
Kenting Drlg Serv	12	dsl	700	S/B N45	350	80/4''
	17	dsl	350	Fail 90	350	50/3.5''
	19	dsl	350	G-D 3000	230	45/3.5''
	26	dsl	700	Sup 400	350	70/4''
	31	d-e	2000	Nat 80UE	1000	140/5''
	36	d-e	1600	Sup 700UE	700	100
KCA Drlg	94	dsl		Cbot 550	375	45

WEST GERMANY

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Deutsche Tiefbohr	T-1	dsl	335	Idco H1000	910	80
	T-14	dsl	2400	C-E A800	1000	140
	T-3	dsl	420	Idco H44CD	460	50
	T-30	d-e	1000	Idco E725D	725	60
	T-36	dsl	1600	Idco H1000	950	80
	T-4	dsl	500	Idco H30	455	60
	T-47	d-e	3900	C-E C3	3000	300
	T-5	dsl	335	Idco H525D	910	60
	T-8	dsl	335	Idco H1000	910	80
	T-81	dsl	375	Coop LTO350	200	40
	T-82	dsl	375	Coop LTO350	200	40
	T-83	dsl		Salt ZA198	200	
	T-84	dsl		Salt ZA198	200	
	T-85	dsl		Salt ZA198	200	
	T-9	dsl	335	Idco H1000	910	80
	T-92	dsl		H-L 6205	130	
	T-93	dsl		H-L 6205	130	
	T-94	dsl		H-L 6205	130	
	T45	d-e	2600	C-E C2	2000	[illegible]00
Preussag Aktiengesellschaft	GH-25	dsl	2000	Wirth GH25	1500	140
	ZA292	dsl	500	Salt	180	30
	900/1	dsl	1500	Cbot 2346	840	100
	900/2	dsl	1500	Cbot 2346	840	100
	900/3	dsl	1450	Cbot 2346	900	100
	1320UE	d-e	3200	Nat 3120UE	2000	250
SAIPEM	5870	d-e	3200	Nat 1625 DE	3000	250
Von Rautenkranz Hermann	ITAG 22	dsl	3000	Nat 110M		200
	ITAG-104	dsl	1450	Wils Mogul		80
	ITAG-108	dsl	1600	Wils M75		100
	ITAG-109	dsl	600	Wils M75		700
	ITAG-23	d-e	3000	Olwl 2000E		250

MIDDLE EAST

BAHRAIN

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
Santa Fe Drlg	142	dsl	2600	Nat 110UE	1500	180

IRAN

Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
SAIPEM	5837	dsl	2600	Idco 1350S	1950	180

IRAQ

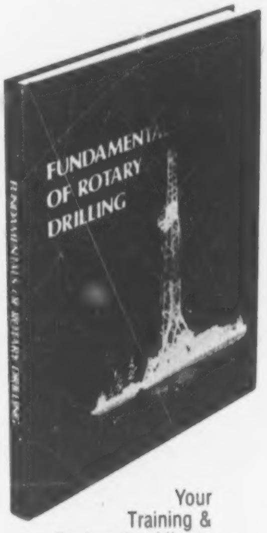
Contractor	Rig No.	Type Power	Total HP All Main Mud Pumps	Drawworks Make And Model	Total HP Available to Drawworks	Rated Depth With 4½-in. Pipe, 100 ft.
SAIPEM	5843	d-e	2800	Olwl E2000	2000	200
	5848	dsl	2600	Idco H1700	1700	165
	5849	dsl	2600	Idco H1700	2000	165

MIDDLE EAST (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
KUWAIT						
Energeers Ltd	1	d-e	2000	MC D3	1000	130
Parker Drlg	189	d-e	3200	OIME 3000E	3000	300
Santa Fe Drlg	KDC 10					
	KDC 11					
	KDC 5					
	KDC 6					
	KDC 7					
OMAN						
Deutsche Tiefbohr	T-17	d-e	2700	Nat 1320UE	1800	200
	T-18	del	3200	Nat 55	1000	110
	T-29	d-e	2600	Nat 1320ME	2000	200
	T-33	del	1600	Nat 55	1000	110
	T-34	del	1600	Idco H1000	950	80
Forex Neptune and/or Affil	12	del	1800	Idco Junior 1200	1400	115
	15	d-e	3200	Idco Super 711	1200	180
	21	d-e	3200	G-D 2100E	2300	254
	23	d-e	3200	G-D 2100RE	3000	254
	57	del	2000	Olwl 760	1000	150
	58	del	2000	Nat 80B	1000	157
Pool-Intairdril	6	del	800	Cbot 750	650	75
QATAR						
Deutsche Tiefbohr	T-6	del	500	Idco H1000	910	80
Santa Fe Drlg	89	d-e	2000	Nat 110UE	1800	160
	131					
SAUDI ARABIA						
Blocker Drlg-Alice	7	del	1400	Cbot 900	950	100
	19	del	1475	Cbot 2346	950	100
Loffland Bros	126	d-e	3200	MC U1220EBD	2000	250
	127	d-e	3200	MC U1220EBD	2000	250
	128	d-e	3200	MC U1220EDB	2000	250
SAUDI ARABIA (Cont'd)						
Pool Arabia	15	dsl	420	Idco BIR550	420	65
	23	dsl	300	Idco H40	450	80
	29	dsl	420	Cbot 1058	420	60
	40	dsl	600	Cbot 700	600	65
	128	dsl	600	Cbot III	450	65
	138	dsl	450	Cbot	450	65
	190	del	550	Cbot	700	75
	191	del	550	Cbot	700	75
	192	dsl	530	I-R 2042/160	700	85
	193	dsl	500	I-R 2042/160	700	85
	194	dsl	750	I-R 2042/160	700	85
	195	dsl	750	I-R 2042/160	700	85
	201	dsl	1400	Olwl	1000	120
	202	dsl	1400	Olwl	1000	120
	203	dsl	1400	Olwl	1000	120
Santa Fe Drlg	67	d-e	2400	Nat 1320DE	3400	200
	70	d-e	2000	Nat 1320DE	3400	200
	90	d-e	2000	Nat 1320DE	2000	200
	101	d-e	2600	Nat 110UE	1500	160
	104	d-e	3400	Nat 1100UE	1500	160
	109	d-e	2000	Nat 110UE	1800	160
SYRIA						
Forex Neptune and/or Affil	25	d-e	3200	G-D 2100RE	3000	254
UNITED ARAB EMIRATES						
Forex Neptune and/or Affil	32	d-e	3200	G-D 1100E	1500	180
	34	d-e	3200	G-D 1100	1500	180
	40	d-e	2000	Nat 80UE	1000	157
	58	del	2000	Nat 80B	1000	157
Geoprosco Intl	36	dsl	725	Idco H900	725	100
	42	d-e	725	Idco ED900	1000	100
	43	d-e	700	Idco ED900	1000	100
Pool-Intairdril	213	el	900	Idco 900	1000	105
	214	el	900	Idco 900	1000	105
	215	el	900	Idco 900	1000	105
UNITED ARAB EMIRATES (Cont'd)						
Santa Fe Drlg	KDC 8	d-e	2800	OIWELL E2000	2000	200
	KDC 9	d-e	2800	Olwl E2000	2000	200
	SF 144	d-e	3400	Olwl E2000	2000	250
	SF 145	d-e	1700	Olwl E2000	2000	250
	93	d-e	1700	Nat 80UE	700	120
	121	d-e	3400	Olwl 2000E	3000	250
	139	dsl	3400	Olwl E2000	2000	250
	143					
	144					
	145					
Sedco Inc	59	dsl	2800	Olwl 860	2200	160
	91	d-e	3400	Nat 110UE	2000	180
	95	d-e	3400	Nat 1320UE	2000	200
	96	d-e	3400	Olwl E2000	2000	200
	97	d-e	3400	Olwl E2000	2000	200
Sonat Offshore Drlg	14	del	2600	C-E C2 Type II	2000	200
SAIPEM	5827	d-e	3200	Idco E2100	2000	200
	5828	d-e	3200	Idco E2100	2000	200
	5887	d-e	3200	Nat 1625 DE	3000	250

SOUTH AMERICA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
ARGENTINA						
Compania Naviera Perez Companc	1	del	1400	Crdw J450	700	69
	2	del	1400	Crdw J450	700	69
	3	dsl	1400	Crdw J450	700	69
	4	dsl	1400	Crdw J450	700	69
	5	dsl	1400	Crdw KM250	350	59
	6	del	1400	Crdw KM250	350	59
	29	dsl	1600	G-D 700	700	100
	36	del	1600	G-D 800	1050	120
	37	del	1400	Crdw KB210	350	59
	42	del	1000	G-D 700	1700	100
	45	d-e	2600	Idco E1700	1700	152
	46	del	1500	G-D 500M	700	100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SOUTH AMERICA (Cont'd)

ARGENTINA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Quitral-Co SAIC	P-01	d-e	2000	C-E Electrohoist II	2100	165
	P-02	d-e	2000	C-E Electrohoist II	2100	180
	P-07	del	1200	Idco H40	450	65
	P-08	del	1500	MC U36	900	100
	P-12	del	1500	Wils	520	20
Rio Colorado SA	E-101	del	1250	MC U36A	700	100
	E-102	del	1250	MC U36A	1000	100
	E-103	del	1250	MC U36A	1000	100
	E-105	del	1000	C-E GC350	800	90
	E-107	del	1800	Nat 100N	1500	160
	E-108	del	1250	Nat	800	100
	E-109	del	1250	Nat N75	1500	110
	E-110	del	1000	Idco H40	500	80
	E-111	del	1500	G-D 800DW	900	110
	E-112	del	1000	Idco H40	500	65
	E-113	del	1600	G-D 800DW	1200	120
	E-125	del	880	Idco H37	500	65
	E-126	del	2600	Nat 1320UE	2000	200
	E-127	d-e	2660	G-D 1500E	2000	200
	E-128	d-e	1140	Idco E525	1000	100
	E-129	del	1600	Nat 75	1000	100
	E-130	del	1320	Idco H40	450	80
	E-132	del	1320	Idco H40	550	80
	E-134	d-e	2600	Nat 1625DE	3000	250
	E-137	del	1900	Idco H1200	2500	150
	E-301	del	230	Crdw KB500	380	120
	E-302	del	160	W-M 1538B	380	110
	E-307	del	160	Idco H-25	380	100
	E-309	del	230	Idco KB210A	280	100
	E-310	del	230	Crdw KB200C	380	100
	E-317	del	550	Crdw KB200C	370	100
	E-318	del	550	Idco H30	230	110
	E-319	del	550	Idco H30	230	110
	E-320	del	550	Idco H30	230	110
	E-323	del	550	Idco H30	230	110
	112	del		Idco H40		65
	146	del				150
Rio Colorado	303	del		W-M 1538B		110
	304	del		W-M 1538B		110
	305	del		Wils Super 38		110
	306	del		Crdw K210A		100
	308	del		Crdw K200		100
	311	del		Wils Super 38		110
	312	del		Crdw KB150		90
	321	del		Idco M20D		85
	322	del		Idco M20D		85
	324	del		Idco M20D		85
	325	del		Idco H25		95
	326	del		Crdw KB210A		100
	327	del		Idco H20		85

BOLIVIA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Helmerich & Payne Rasco	9	d-e	1600	HS1500	1500	180
	11	d-e	1600	HS1500	1500	180
Rio Colorado SA	E-104	del	1000	Idco H525	800	100

BRAZIL

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Engepetro-Engennaria de Petroleo	EG-1		2600	Idco ES2100		200
	EG-2		2600	Idco ES2100		200
Parker Drlg	132-HH/20	del	1500	OIME TBA2000	1500	200
	134-HH/22	del	1500	OIME TBA2000	1500	200
	151-HH/34	del	1500	OIME TBA2000	1500	200
	185-HH/40	del	2000	OIME TBA2000	2000	200
Rio Colorado SA	E-119	del	1650	C-E A800	1600	120
	E-120	del	2600	S/B N95A	2250	140
	E-121	d-e	2600	S/B N95A	2000	160
	E-122	d-e	2600	S/B N95A	2000	160
	E-123	d-e	2600	Nat 1320E	2000	200
	E-124	d-e	2600	Nat 1320E	2000	200

COLOMBIA

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Helmerich & Payne (Colombia)	7	d-e	2000	HS1500	1500	180
	10	d-e	1600	HS1500	1500	180
Parker Drlg	104	del	1500	Nat 50A	1500	100
	158	del	1500	Nat 80B	1500	140
	209	del	750	Nat 50	750	100
	216	del	3200	OIME 2000M	3200	250
	219	del	3200	OIME 2000M	3200	250
	110-HH/9	del	1500	OIME HH1500	1500	170
	197-HH/43	del	2000	OIME TBA2000	2000	200
Pool-Intairdril	207	del	400	Wils Mogul 42	400	
	208	del	2000	OIME	1000	120
	209	del	2000	OIME	1000	120
Rio Colorado SA	135	del	1100	Idco H40	600	80
	144	del		S/B N85		140

ECUADOR

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
Helmerich & Payne Del Ecuador	12	d-e	1600	HS1500	1500	160
	18	del	600	Coop LTO550	350	60
Parker Drlg	135	del	1500	OIME TBA2000	1500	200

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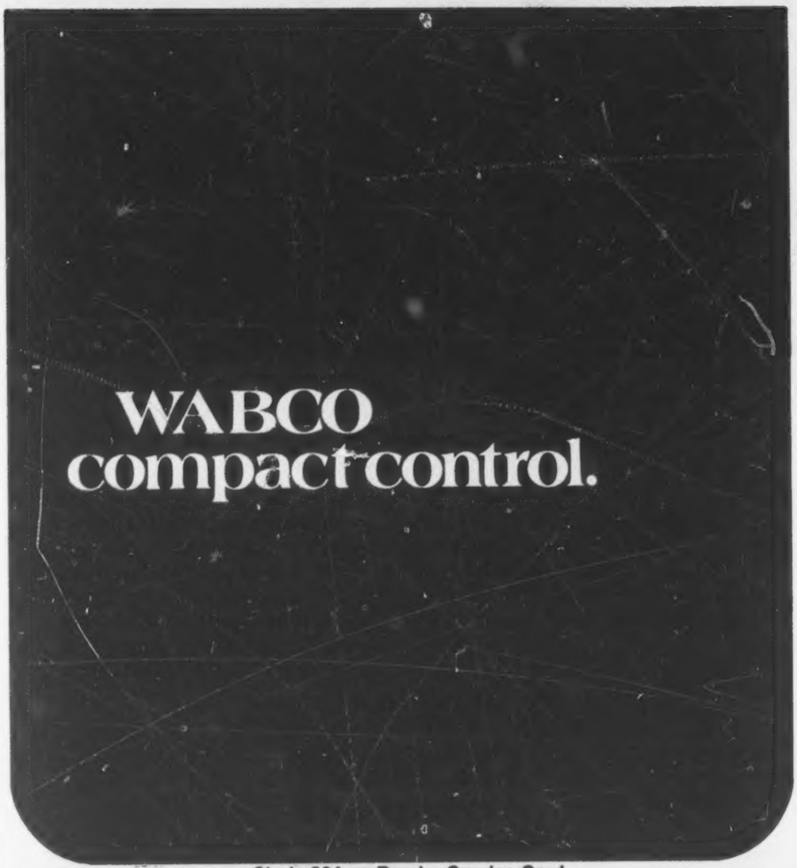
SOUTH AMERICA (Cont'd)

• Contractor	Rig No. •	Type Power •	Total HP All Main Mud Pumps •	Drawworks Make And Model •	Total HP Available to Drawworks •	Rated Depth With 4½-in. Pipe, 100 ft. •
ECUADOR (Cont'd)						
Parker Drlg	159	dsl	2200	Olwl 76	1560	150
Pool-Intairdril	126	dsl	230	Wils Mogul 42	450	65
	210	dsl	400	Wils DD42428	450	30
	217	dsl	400	Idco H37	450	
PERU						
Blocker Intl	21	dsl	550	Idco H37	456	70
	22	dsl	550	Idco H37	456	70
	23	dsl	550	Idco H37	456	70
	24	dsl	550	Idco H37	456	70
	31					150
	34					150
Parker Drlg	155	dsl	1500	OIME TBA2000	1500	200
	206	dsl	2000	OIME TBA2000	2000	200
	207	dsl	2000	OIME TBA2000	2000	200
	107-HH/4	dsl	1500	OIME HH1250A	1500	150
	108-HH/5	dsl	1500	OIME HH1500	1500	150
	127-HH/15	dsl	1500	OIME TBA2000	1500	200
	131-HH/19	dsl	1500	OIME TBA2000	1500	200
	144-HH/30	dsl	1500	OIME TBA2000	1500	200
	145-HH/31	dsl	1500	OIME TBA2000	1500	200
	154-HH/35	dsl	1500	OIME TBA2000	1500	200
Rio Colorado SA	E-106	dsl	1000	C-E GC350T	1000	90
	E-114	dsl	900	Crdw KT250	500	60
	E-115	dsl	900	Crdw KT250	500	60
	E-116	dsl	900	Crdw KT250	500	60
	E-117	dsl	900	Crdw KT250	500	60
	E-118	dsl	600	I-R RT5	200	30
	313	dsl		Crdw KB150		90
	314	dsl		Crdw KB150		90
	315	dsl		Crdw KB150		90
	316	dsl		Crdw KB150		90
TRINIDAD & TOBAGO						
Skinner Marine Oper	15	dsl	280	Cbot 200CA Rocket	280	30
	16	dsl	660	Cbot 1287	300	40
	17	dsl	1200	Olwl 660		90
	18	d-e	4000	Olwl 840E	2000	160
VENEZUELA						
Helmerich & Payne CA	3	dsl	600	Idco H37	600	60
	6	dsl	300	Idco H44	400	50
	14	dsl	600	Idco H37	400	60
	17	dsl	600	Coop LTO550	600	60
	19	dsl	600	Coop LTO550	600	60
	20	dsl	600	Coop LTO550	600	60
	21	dsl	600	Coop LTO550	600	60
	28	dsl	1500	Nat 110	1500	180
	30	dsl	1200	Idco H525	1200	100
	31	dsl	1200	Idco H525	1000	100
	67	dsl	1500	Nat 110	1500	180
Loffland Bros	14	dsl	700	MC U36A	785	90
	24	d-e	2000	Nat 100E	2000	160
	41	dsl	2000	MC U914C	2000	200
	54	d-e	2900	MC U1220EB	3300	280
	61	dsl	500	Idco H525	566	65
	68	d-e	3200	MC U1220EB	3300	280
	94	d-e	2000	MC U20E	1900	160
Santa Fe Drlg	2	dsl	1700	Nat 130	1800	200
	8	dsl	2200	Nat 130	1800	200
	9	dsl	1850	Nat 130	1800	200
	15	dsl	800	Idco 525	600	90
	16	dsl	600	Nat T32	250	50
	20	dsl	800	Idco H40D	350	70
	21	dsl	1200	MC U914B	1800	200
	22	dsl	350	Idco H35	350	50
	24	dsl	350	Idco H35	350	50
	110	d-e	2000	Nat 1320UE	2000	200
	115	d-e	2000	Nat 1320DE	3400	200
	119	d-e	2800	Olwl E2000	2000	200
	125	dsl	800	Hoop GXTA	450	60
	129	dsl	1700	G-D 500M	650	90



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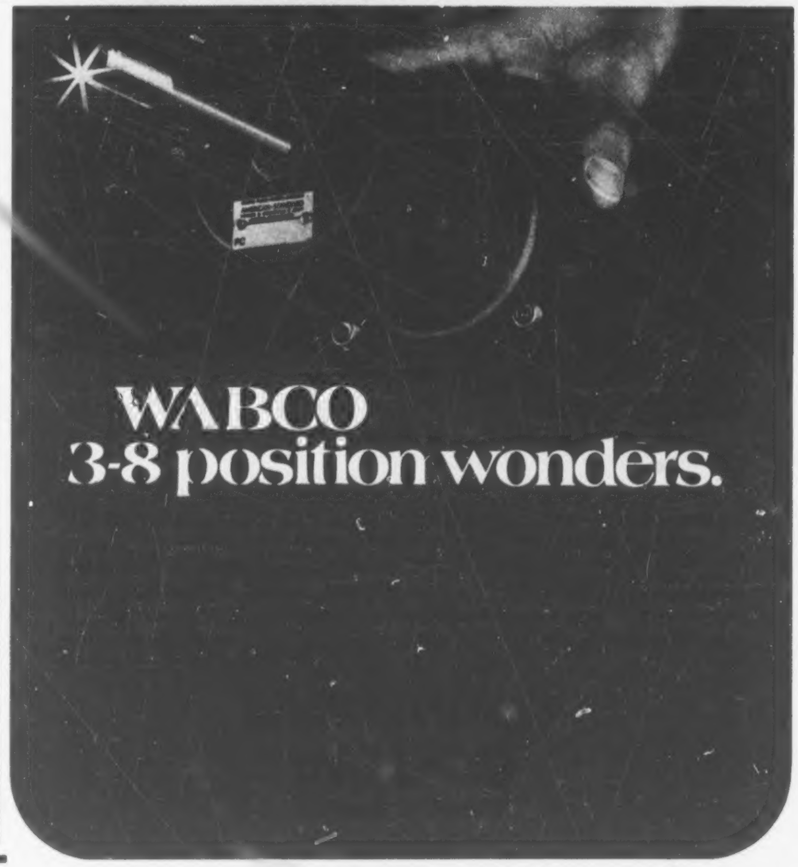

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DOWNHOLE TOOLS AND TECHNOLOGY

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Engineering Profits into Energy Operations

Weather Plays Role In Rig Count Slump

The U.S. rotary rig count continued to fall during late February and early March, but strong showings in southern and western states indicate that at least part of the slump may be related to unusually severe late-winter weather in northeastern and central portions of the country.

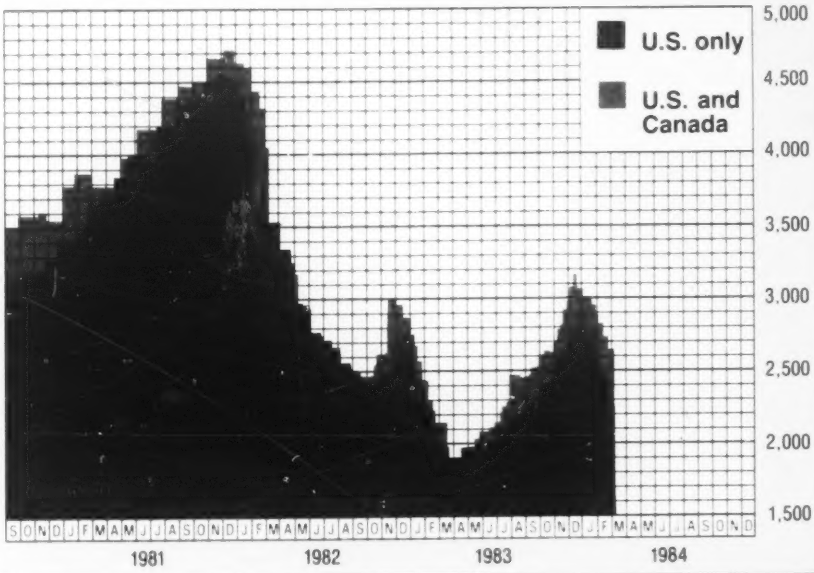
Illinois, for example, saw almost 40% of its active rigs idled between mid-February and mid-March. And Michigan drillers turned off 17 out of 31 active rigs during the same period.

Hardest hit, however, was New York, which went from 15 rigs turning on February 13 to zero by March 5. Weather was a factor there, also, but probably more important was a shut-in of natural gas invoked by buyers in response to surplus gas supplies in the state. Another factor was a shutdown by the state of 12 Bass Island producing wells in western New York so that officials could study the fractured dolomite reservoir.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Feb. 20, 1984	Feb. 27, 1984	Mar. 5, 1984	Mar. 12, 1984
Alabama				
Land	15	14	13	13
Offshore	1	1	1	1
Alaska				
Land	9	9	10	10
Offshore	4	4	4	5
Total	13	13	14	15
Arkansas	24	20	22	19
California				
Land	72	80	75	74
Offshore	22	20	19	18
Total	94	100	94	92
Colorado	51	52	54	57
Florida	2	1	1	2
Hawaii	0	1	1	1
Idaho	1	0	0	0
Illinois	33	19	15	10
Indiana	4	2	3	5
Kansas	127	124	126	125
Kentucky	10	6	7	7
North Louisiana	32	31	30	30
South Louisiana				
Inland Waters	47	45	47	48
Land	101	104	98	103
Offshore	129	131	122	123
Total	309	311	297	304
Michigan	31	19	11	14
Mississippi	34	36	32	31
Montana	38	37	35	34
Nebraska	9	9	8	10
Nevada	1	2	2	2
New Jersey	0	1	1	1
New Mexico	69	64	62	66
New York	11	1	0	0
North Dakota	40	41	40	41
Ohio	55	35	28	24
Oklahoma	362	368	357	348
Pennsylvania	26	27	27	26
South Dakota	0	1	1	1
Texas				
Offshore	42	38	42	50
Inland Waters	7	5	4	4
Dist. 1-S. Central Tex.	16	18	14	17
Dist. 2-Middle Tex. Coast	53	53	50	46
Dist. 3-Upper Tex. Coast	105	99	103	108
Dist. 4-Lower Tex. Coast	72	73	78	80
Dist. 5-Northeast Tex.	29	31	29	31
Dist. 6-Far Northeast Tex.	70	72	75	76
Dist. 7B-N. Central Tex.	57	54	52	42
Dist. 7C-W. Central Tex.	56	58	53	55
Dist. 8-Far West Tex.	134	128	147	145
Dist. 8A-West Tex.	58	50	52	50
Dist. 9-North Tex.	72	72	67	72
Dist. 10-Tex. Panhandle	54	57	55	55
Total	825	808	821	831
Utah	49	51	50	43
Virginia	2	3	3	3
Washington	1	1	1	1
West Virginia	31	27	28	26
Wyoming	123	115	112	107
Total U.S.	2,391	2,310	2,277	2,260
Canada	322	334	347	343
Canada-Offshore	13	14	14	15
U.S. and Canada	2,726	2,658	2,638	2,618



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APRIL 1984 NUMBER 5 VOLUME 56

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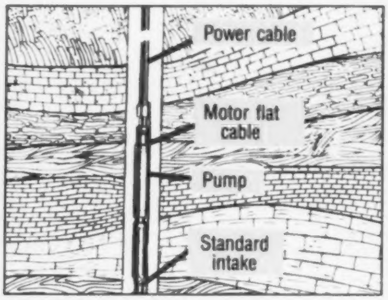

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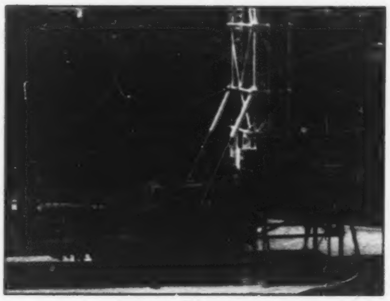

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DOWNHOLE TOOLS AND TECHNOLOGY

Amoco Research Tackles Drilling, Completion Technology 21

In an exclusive interview, Robert L. Huggins, drilling and production research director for Amoco, says the company wants to keep its research people with their feet on the ground, solving practical problems that have an economic impact.

Watch Out For Elastomer-Inhibitor Compatibility 28

by Michael J. Watkins, Battelle Petroleum Technology Center. Elastomer chemists and corrosion inhibitor chemists have recognized the problem for years, but the proprietary nature of each technology has slowed a solution.

What's New ... In Downhole Tools And Technology 42

Products and techniques applicable to operations downhole are available from a number of suppliers. Brief descriptions are presented, along with opportunities for readers to send for additional information.

Electrical Submersible Pump Teardown Inspection, Part 1 48

by James F. Lea, Amoco Production Co., and William J. Powers, TRW Reda. Frequently, the exact cause of a pump failure cannot be identified. Even so, however, it may be possible to identify remedies for operating problems.

How Temperature And Pressure Affect Clear Brines 58

by J. Tim Hubbard, Magcobar Group. Field practice generally ignores compressibility and thermal expansion determinations in favor of calculating the required fluid density from the bottomhole pressure, plus an overbalance safety margin.

How To Determine Your Rig's Depth Limit 70

by John L'Espoir, George E. Failing Co. The size of the drill pipe to be used with a rig is only one of many factors determining its depth rating. Other factors include capacities of the drawworks, mud pumps, and compressors.

Hand-Held Calculator Simplifies Abnormal Pressure Detection 82

by Michael A. Simpson, Mobil Oil Exploration and Producing Southeast Inc. The program was written so that, when time is limited, formation pressure can be calculated quickly and accurately, and monitored continuously.

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ABOUT THE COVER: PEI's Graphics Director, Don Fickert, prepared the paper sculpture which dramatically represents the drilling of a directional well.

NEXT MONTH: The annual Offshore Technology issue in May will discuss some of the innovative technology involved in developing frontier offshore areas.

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draulic fractures may not be confined to pay zones and that less-than-optimum gas recovery will result with current stimulation technology."

Core analyses conducted since 1981, and recent flow testing at the MWX site, also reveal a significant number of natural fractures in the paludal zone. One of the objects of the Unconventional Gas Recovery Program, therefore, is to determine the nature of this fracture network and its effect on gas recovery and on stimulation performance.

Field tests completed while the MWX holes were being drilled also helped to determine that lenticular sands and surrounding shales are more permeable than expected, and that the orientation of hydraulic fractures can be reliably predicted. Seismic surveys to determine, as precisely as possible, the size and location of gas-bearing lenses throughout the Mesaverde formation are still underway.

A gas recovery operation at the Mesaverde's 6,500-ft level is being planned for late 1984, following complete analysis of the current field work.

World Rig Count Drops By 228 In 1983

The Free World rotary rig count dropped by 228 rigs during 1983 for a 16% loss that was led by Africa, which was down by 71 rigs (36.7%). Africa's decline was led by Algeria, which went from 80 active rigs at the beginning of 1983 to 35 in January 1984.

Europe, paced by declines in Germany and the UK, exhibited the second largest drop – 53 rigs, for a 24% loss. The Middle East, Latin America, and the Far East also registered declines during the year, with the South Pacific area (up 14%) standing tall as the only gainer.

International Rotary Rig Report, prepared by Hughes Tool Co.

(Figures in parentheses indicate how many of each country's rigs are offshore rigs.)

Africa	**Jan. 1983**	**Dec. 1984**	**Jan. 1984**
Algeria	80	35	35
Angola	13(9)	9(7)	9(7)
Benin	1(1)	1(1)	1(1)
Cameroun	7(6)	5(5)	5(5)
Chad	1	0	0
Gabon	10(8)	6(6)	6(6)
Guinea	1(1)	0	0
Ivory Coast	5(5)	1(1)	1(1)
Libya	23(2)	28(2)	28(2)
Morocco	5	5	5
Niger	1	0	0
Nigeria	21(11)	13(6)	13(6)
Rep. of Congo	5(4)	5(5)	5(5)
Rep. of Zaire	2(1)	2(1)	2(1)
Senegal	1	0	0
Sierra Leone	1(1)	0	0
South Africa	2(2)	2(2)	2(2)
Sudan	3	3	3
Tanzania	0	1	1
Tunisia	11(3)	7(2)	6(1)
	193(54)	123(38)	122(37)
Europe			
Austria	11	5	8
Denmark	2(2)	5(4)	3(3)
France	13	17(1)	21(1)
Germany	33	16	16
Greece	4(2)	3(1)	3(1)
Holland	16(12)	17(9)	17(9)
Ireland	0	1(1)	1(1)
Italy	37(7)	25(7)	25(7)
Norway	11(11)	9(9)	11(11)
Portugal	1	1	0
Spain	10(4)	6(2)	7(3)
Switzerland	1	0	0
United Kingdom	56(53)	42(2)	41(41)
Yugoslavia	25	14(2)	14(2)
	220(91)	161(76)	167(79)
Far East			
Bangladesh	2	2	2
Brunei	13(9)	9(7)	8(6)
Burma	34(1)	33(1)	33(1)
India	54(12)	58(17)	58(17)
Indonesia	90(33)	81(24)	81(24)
Japan	19(2)	21(2)	21(2)
Korea	0	1	1
Malaysia	11(11)	11(11)	10(10)
Pakistan	18	17	17
Philippines	10(1)	3(1)	2
Taiwan	0	5	3
Thailand	9(4)	12(6)	11(6)
	260(73)	253(69)	247(66)
Latin America			
Argentina	62(1)	73	70
Barbados	1	1	1
Bolivia	7	9	6
Brazil	100(34)	68(24)	71(26)
Chile	6(3)	6(3)	5(3)
Colombia	22(1)	20	13
Costa Rica	1	1	1
Ecuador	5(1)	5	6
Guatemala	3	1	1
Mexico	187(22)	185(33)	193(28)
Peru	18(5)	16(6)	16(6)
Trinidad	11(5)	10(5)	10(4)
Venezuela	63(18)	30(12)	31(9)
	486(90)	425(83)	424(76)
Middle East			
Abu Dhabi	44(27)	26(19)	30(22)
Bahrain	1	2	1
Dubai	4(2)	11(5)	7(3)
Egypt	40(22)	38(23)	38(23)
Iran	11(2)	20(2)	20(2)
Iraq	28	18	18
Jordan	0	3	3
Kuwait	5	3(1)	6(1)
Oman	12(2)	11	9
Qatar	4(2)	2(1)	2(1)
Ras Al Khaimah	2(1)	0	0
Saudi Arabia	28(12)	23(11)	19(11)
Sharjah	1	0	0
Syria	15	16	19
Turkey	33	24	24
Umm Al Qaiwain	1	0	0
	229(70)	197(62)	196(63)
South Pacific			
Australia	26(11)	30(11)	28(10)
New Zealand	1	4(3)	3(2)
Papua New Guinea	1(1)	1(1)	1(1)
	28(12)	35(14)	32(12)
Totals	1,416 (390)	1,194 (342)	1,188 (333)

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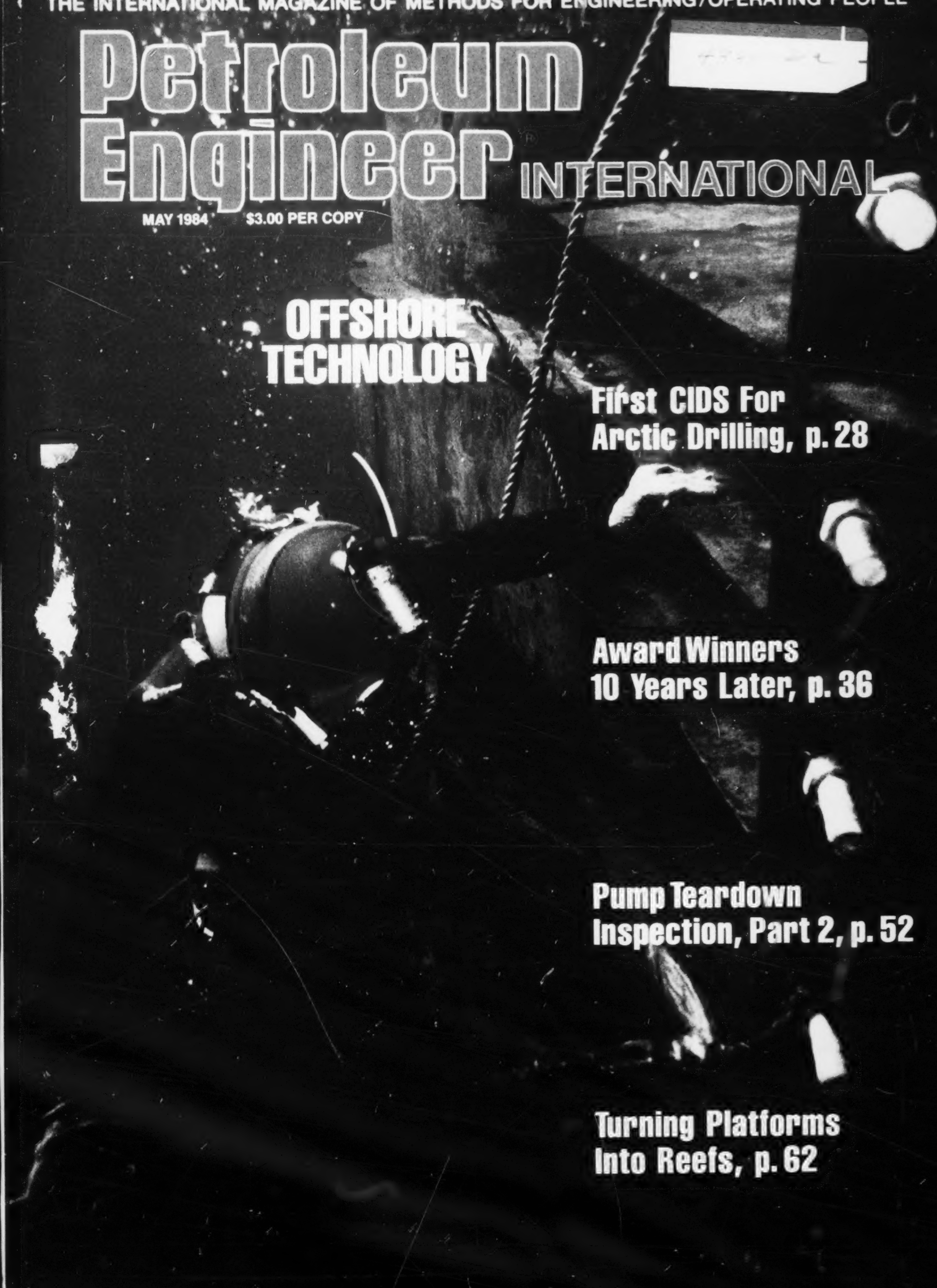

OFFSHORE TECHNOLOGY

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OFFSHORE TECHNOLOGY

Offshore Technology Has A Tremendous Future 21
by Harrison T. Brundage, Gulf Coast Editor. At least 240 billion barrels of recoverable oil exist in the world's continental shelves. Drilling, engineering, and oceanographic research broaden this potential.

First CIDS Being Built For Arctic Offshore Drilling 28
by Max Halebsky and Sherman Wetmore, Global Marine Development Inc. Concrete Island Drilling Systems can be rapidly deballasted and moved to new locations within 2 days. And they don't require any active ice defense measures.

Original Award Winners Fulfilling Early Promise 36
by Rich McNally, Associate Editor. With the tenth annual Special Meritorious Awards for Engineering Innovation scheduled to be announced shortly, a look backward at some of the original award winners shows some impressive successes.

What's New... In Offshore Technology 48
Briefly described innovative products and techniques applicable to offshore applications include a flexjoint that incorporates the latest in elastomeric technology and filters with a high throughput-to-weight ratio.

Electrical Submersible Pump Teardown Inspection, Part 2 52
by James F. Lea, Amoco Production Co., and William J. Powers, TRW Reda. Serious scale buildup samples should be saved in plastic bags so that they can be analyzed for chemical treatment at a later date.

Rigs-To-Reefs Promotes Good Engineering And Ecology 62
by Harrison T. Brundage, Gulf Coast Editor. A cooperative effort to turn unneeded offshore platforms into artificial reefs has widespread support, from private companies, fishing groups, and state and federal governments.

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ABOUT THE COVER: Diver checks flotation tank being installed on a platform jacket that is destined to become an artificial reef offshore Alabama. (Related story, page 62. Photo by Joe Tillmans, Oceaneering International Inc.)

NEXT MONTH: The June International Report will discuss technological innovations taking place around the globe.

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First Quarter Rig Count Tops 1983, But Completions Fall

Average U.S. rotary rig activity during the first quarter of 1984 – a quarter in which Hughes Tool Co.'s count of active rigs declined in all but one of 13 weeks – came to 2,461. That represents an increase of 162 rigs at work each week over the same period in 1983.

Nevertheless, the latest figures from Petroleum Information Corp. indicate that completions during this year's first quarter were down by 5.6%. PI says that total completions for 1984's first quarter were 20,380, a decline of 1,211 completions from last year's first 3 months.

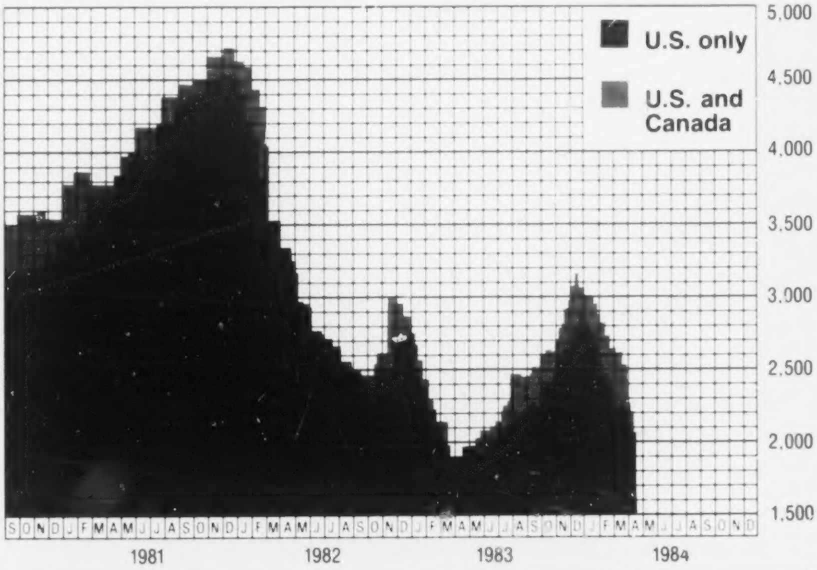
New field wildcat completions were down 10.4% during the first quarter of 1984, compared with the same period in 1983. And their success rate was only 14.2%. In 1983's first quarter, the rate of success for new field wildcats had been 16.2%.

Gas well completions were off 20.5% during the first quarter of this year.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Mar. 19, 1984	Mar. 26, 1984	Apr. 2, 1984	Apr. 9, 1984
Alabama				
Land	13	13	16	8
Inland Waters	0	0	0	1
Offshore	1	1	2	2
Alaska				
Land	10	11	11	13
Offshore	3	3	2	3
Total	13	14	13	16
Arkansas	22	23	21	24
Arizona	0	0	0	1
California				
Land	80	76	73	78
Offshore	22	22	18	17
Total	102	98	91	95
Colorado	52	53	46	46
Florida	2	2	2	2
Hawaii	1	1	1	1
Illinois	11	9	2	7
Indiana	4	5	0	4
Kansas	125	120	85	79
Kentucky	7	5	3	3
North Louisiana	31	29	29	29
South Louisiana				
Inland Waters	49	50	46	45
Land	108	102	103	95
Offshore	121	121	117	123
Total	309	302	295	292
Michigan	26	24	21	21
Mississippi	31	32	34	27
Montana	26	30	29	33
Nebraska	11	10	9	9
Nevada	2	3	3	5
New Jersey	1	1	1	1
New Mexico	62	73	69	70
New York	6	5	2	5
North Dakota	42	47	45	47
Ohio	16	18	18	14
Oklahoma	324	301	287	254
Pennsylvania	29	29	25	20
South Carolina	1	1	1	1
South Dakota	1	1	1	1
Texas				
Offshore	51	56	56	56
Inland Waters	5	8	7	7
Dist. 1-S. Central Tex.	18	20	19	21
Dist. 2-Middle Tex. Coast	34	34	34	32
Dist. 3-Upper Tex. Coast	108	105	97	93
Dist. 4-Lower Tex. Coast	81	78	74	79
Dist. 5-Northeast Tex.	34	34	33	38
Dist. 6-Far Northeast Tex.	67	70	71	65
Dist. 7B-N. Central Tex.	40	42	35	47
Dist. 7C-W. Central Tex.	64	62	54	59
Dist. 8-Far West Tex.	139	134	137	142
Dist. 8A-West Tex.	54	54	60	54
Dist. 9-North Tex.	71	61	74	74
Dist. 10-Tex. Panhandle	54	44	40	30
Total	820	802	791	806
Utah	39	42	44	43
Virginia	3	4	3	3
Washington	1	1	1	0
West Virginia	26	28	25	31
Wyoming	108	108	94	90
Total U.S.	2,237	2,206	2,074	2,062
Canada	323	283	190	133
Canada-Offshore	15	14	15	14
U.S. and Canada	2,575	2,503	2,279	2,209



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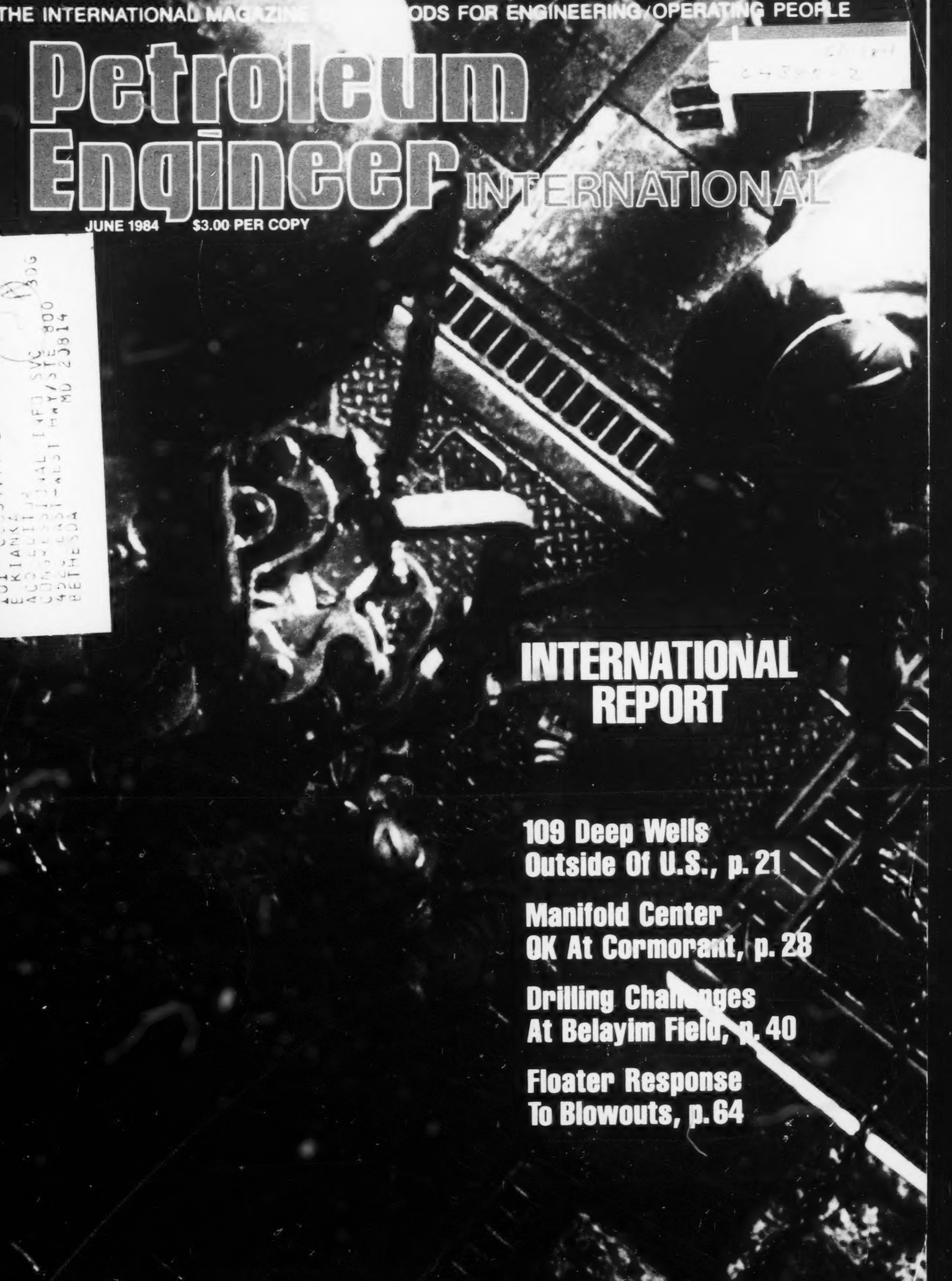

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Drilling Upturn Reflects Return To Normalcy

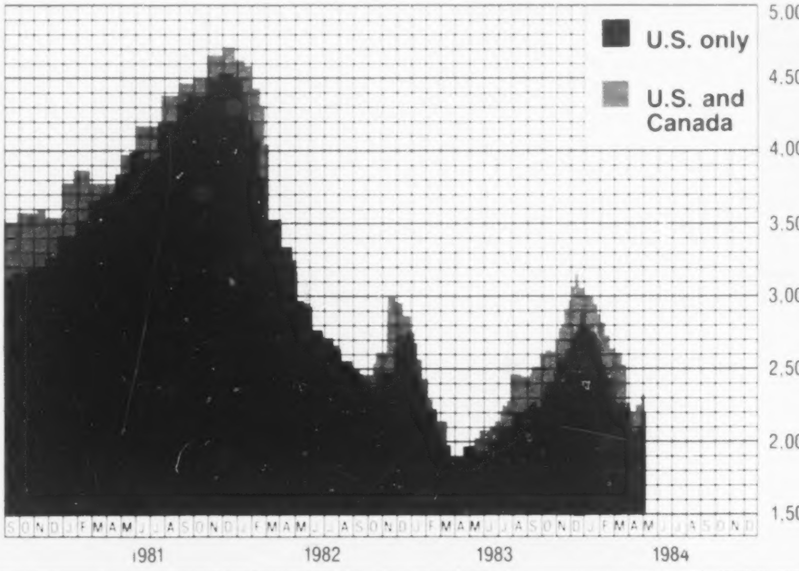
For the first time this year, every week covered in the accompanying table reflects an increase in U.S. rotary rig activity over the preceding week. And the recovery came right on schedule, which indicates that the pattern of drilling in the U.S. may be returning to normal after having soared to breath-taking heights in 1981.

Canada also seems to be reverting to traditional patterns of activity, with slow going for rigs during the spring thawing season. As a rule, most drilling in Canada gets done in the winter. And this year, after topping off at 361 in early March, the Canadian rig count dropped steadily until it reached two figures by the end of April. It moved back into three figures in early May, but we'd be surprised to see it return to the 360-level before next winter.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Apr. 16, 1984	Apr. 23, 1984	Apr. 30, 1984	May 7, 1984
Alabama				
Land	11	10	12	14
Inland Waters	2	2	2	2
Offshore	2	2	2	2
Alaska				
Land	11	11	11	12
Offshore	2	2	2	3
Total	13	13	13	15
Arkansas	24	26	25	21
Arizona	1	1	1	1
California				
Land	79	76	81	84
Offshore	15	17	14	16
Total	94	93	95	100
Colorado	44	47	48	47
Florida	2	2	2	2
Hawaii	1	1	1	1
Illinois	9	13	22	23
Indiana	5	5	4	4
Kansas	89	114	114	95
Kentucky	3	3	4	6
North Louisiana	25	27	28	33
South Louisiana				
Inland Waters	44	43	46	48
Land	93	91	91	89
Offshore	125	123	125	123
Total	287	284	290	293
Michigan	15	15	26	29
Mississippi	29	32	28	27
Montana	27	27	24	25
Nebraska	7	8	9	8
Nevada	7	7	6	8
New Jersey	1	1	1	1
New Mexico	76	72	78	79
New York	3	8	7	7
North Dakota	44	36	45	46
Ohio	25	24	29	34
Oklahoma	279	297	304	311
Pennsylvania	19	22	24	25
South Carolina	1	1	1	1
South Dakota	1	1	1	1
Texas				
Offshore	61	61	61	57
Inland Waters	6	6	5	7
Dist. 1-S. Central Tex.	22	22	17	22
Dist. 2-Middle Tex. Coast	37	35	41	32
Dist. 3-Upper Tex. Coast	99	91	89	88
Dist. 4-Lower Tex. Coast	72	74	69	72
Dist. 5-Northeast Tex.	37	41	37	28
Dist. 6-Far Northeast Tex.	66	59	63	68
Dist. 7B-N. Central Tex.	48	52	52	47
Dist. 7C-W. Central Tex.	55	55	65	63
Dist. 8-Far West Tex.	133	133	127	134
Dist. 8A-West Tex.	66	66	67	60
Dist. 9-North Tex.	70	76	49	77
Dist. 10-Tex. Panhandle	47	50	49	47
Total	819	821	817	802
Utah	40	38	43	42
Virginia	4	4	5	5
West Virginia	27	33	32	31
Wyoming	96	93	84	82
Total U.S.	2,107	2,156	2,199	2,200
Canada	116	85	76	103
Canada-Offshore	13	14	14	14
U.S. and Canada	2,236	2,255	2,289	2,317



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INTERNATIONAL REPORT

International Deep Drilling Costs Approach $2 Billion 21

by Harrison T. Brundage, Gulf Coast Editor. In 1983, 54 different operators drilled and completed deep wells in 29 countries of the Free World. Probable discoveries were made in 27 of 86 wildcats and in six of eight development wells.

Shell-Esso Succeeds With Cormorant UMC 28

by Steven D. Moore, Drilling Editor. Because the platform and the underwater manifold center are 4 miles apart, the project team developed a specially insulated pipe to prevent oil being piped through the flow lines from cooling.

Egypt's Belayim Field Challenges Drillers 40

by Ermenegildo Possamai, AGIP S.p.A., and Ezz Mohamed Fandi, Petroleum Belayim Co. Extra production needed to reach a 200,000-b/d goal will come from 19 new single wells included in the offshore expansion program.

10th Annual Competition Recognizes Engineering Innovators 50

Some 19 winners of Special Meritorious Awards for Engineering Innovation were chosen by a distinguished panel of engineers and engineering managers from operating companies in the petroleum industry.

Electrical Submersible Pump Teardown Inspection, Part 3 56

by James F. Lea, Amoco Production Co., and William J. Powers, TRW Reda. Manufacturers normally recommend air checks on the bottom seal at 3 to 4 psi for leaks and air checks at 5 psi on the fluid check valve.

How Floaters Respond To Subsea Blowouts 64

by Jerome Milgram, Massachusetts Institute of Technology, and Paul R. Erb, Conoco Inc. Recent technical studies clearly demonstrate that actual loss of buoyancy in a blowout is quite small for all reasonable water depths.

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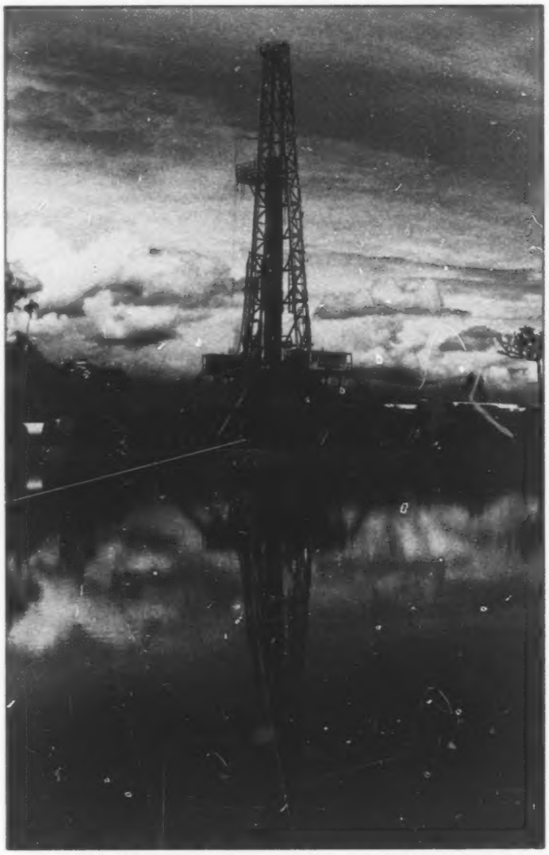
ABOUT THE COVER: A drilling crew makes hole on Marathon's Brae A platform in the UK sector of the North Sea. (Photo courtesy of Marathon Oil Co.)

NEXT MONTH: The Well Completions and Workover Report in July will discuss tools involved in servicing 500,000 wells on some form of artificial lift.

International Deep Drilling Costs Approach $2 Billion

by Harrison T. Brundage, *Gulf Coast Editor*



This is Rig 216, a helirig rated to 25,000 ft, owned by Parker Drilling Co., Tulsa, Okla. This unit was used to drill several offset and exploratory wells in Colombia, South America. (Photo courtesy of Parker Drilling Co.)

Exploratory and development drilling below depths of 15,000 ft (4,572 m) are soon expected to cost over $2 billion per year. A recent survey by PETROLEUM ENGINEER INTERNATIONAL indicates that worldwide deep drilling expenditures were $1,733,960,440 in 1983, with total drilling footage of almost 2 million ft. About 30 deep wells were being drilled by year-end in the non-Communist world outside the U.S. About 20 wells expected to be completed at depths greater than 15,000 ft were evidently under way in the Soviet Union.

This survey stresses wildcats, since most of the wells included were originally listed by Petroconsultants, an international firm concerned largely with exploration. Some development drilling is under way to these depths, however, in Canada, Latin America, the North Sea, West Germany, Italy, and the Middle East. Increased drilling can be expected as these plays accelerate and more finds are made at great depths, requiring subsequent development.

Last year, 54 different operators drilled and completed deep wells in 29 countries in the non-Communist world. They employed contractors of various nationalities, including Brazilian, Spanish, French, Norwegian, British, Libyan, Italian, Canadian, and American. They completed 94 wells in the non-Communist world. The USSR completed an estimated 15 deep wells, for a worldwide total of 109.

Probable discoveries were made in 27 of the 86 wildcats (31%). Six of eight development wells found pay in the deep objectives (75%). The overall success ratio was 35%.

Total mud costs for the non-Communist world amounted to $76,447,349, for an average cost per well of $813,270. Average mud costs were highest in Canada ($1,806,094 per well) where average depth was 19,001 ft (5,792 m) – and lowest in Western Europe at $551,516 per well, where average depth was 17,554 ft (5,351 m).

Bit use averaged 53 per well in the non-Communist world, for an average of 366 ft (112 m) per bit.

Bit usage in Western Europe averaged 72 per well, influenced largely by hard drilling in Spain and other areas close to the indurating influence of the Pyrenees and the Alps. Hard drilling in basins near the Andes in Colombia had a similar effect on bit usage in Latin America.

In the North Sea, bit usage averaged 34 per well. Deep drilling experience is gaining momentum, and specialized bit use makes for efficient drilling, particularly for exploitation work.

Canada's deep frontier wildcats were by far the world's most expensive – averaging $46,476,946 per well in 1983. However, they had a good success ratio, 3:8, or 37.5%. Shell Canada Resources Ltd. found gas at Glenelg J-48 – TD was 16,890 ft. Subsequently Shell has made another deep gas find in its offshore Nova Scotia drilling program.

Latin America continues to lead non-Communist world deep drilling regions, with 31 wells completed last year. There were five Venezuelan discoveries out of 19 wells completed there. Drilling activity centered in the Urdaneta, Ceuta, and Alpuf areas.

The North Sea remains active, with 18 completions last year averaging $15,055,638 per well. Included were 14 wildcats and 4 development wells, with an overall success ratio of 39% (7 wells productive). In February 1984, Burmah Oil Exploration Ltd. completed an additional well, 22/2, in the UK sector, to 18,030 ft TD, as an oil well.

In continental Europe, OMV Aktiengesellschaft reached total depth of 28,054 ft (8,551 m) at Zisterdorf Ubertief 2A well. In March 1984, the well was waiting on completion, having found gas. This well is believed to be the deepest well drilled in the world outside the U.S. and USSR.

West Germany has become a mature province for deep development drilling. Deep drilling for pre-salt, gas-bearing Rotliegendes sandstone in the Soehlingen field area has been described recently.[1]

In Italy, deep drilling in the Milan-Po Valley area continues. Five deep wells were completed in Italy last year, one in Sicily, three in France, and four in Spain. African deep drilling included one well each in Gabon and Egypt, and three in Libya.

In the Middle East, deep drilling is centered in basinal areas near the Strait of Hormuz, where Mesozoic and Permian gas is being developed, and abnormal pressure regimes are being studied.

In the Far East, western Australia is becoming a deep drilling province. Interesting plays are developing, particularly in the Timor Sea. A deep drilling play is under way in New Zealand, where Shell NZ, as operator for Shell BP Todd, successfully completed the deep Kapuni well last October. Total depth was 18,582 ft. In Japan, two deep gas wells were completed last year. A deep geothermal drilling program has been planned in Japan for several years.

In Indonesia, generally there is little drilling to 15,000 ft. The basement is shallow in most areas, and high temperatures occur at shallow depths also, due to widespread vulcanism. In Kalimantan, however, one operator completed a highly productive well to about 14,990 ft TD, just shallow enough to be excluded from this report. Deeper wells will be drilled in the area in search of deeper pay zones.

This is Parker Drilling Co. Rig 140, a helirig rated to 20,000 ft. During 1983, the rig was used to drill some difficult-access wells in Papua, New Guinea. (Photo courtesy of Parker Drilling Co., Tulsa, Okla.)

Country-by-country analysis of 1983 international deep wells

	Wells completed or TD'd	Average depth, ft
Canada	**8**	**19,001**
Latin America	**31**	**16,817**
Argentina	1	16,965
Bolivia	1	15,079
Brazil	4	16,252
Colombia	4	17,447
Ecuador	1	15,428
Guatemala	0	0
Peru	1	16,916
Venezuela	19	16,954
North Sea	**18**	**15,983**
Netherlands	2	16,032
Norway	5	15,883
United Kingdom	11	16,020
Other Western Europe	**17**	**17,554**
Austria	1	28,054
France	3	16,683
Italy	5	17,087
Sicily	1	17,513
Spain	4	16,644
West Germany	3	16,927
Africa	**5**	**15,655**
Egypt	1	15,524
Gabon	1	15,321
Libya	3	15,810
Middle East	**6**	**16,131**
Dubai, United Arab Emirates	1	15,400
Qatar	1	16,190
Ras Al Khaimah	1	15,743
Sharjah	1	16,501
Turkey	1	15,840
Umm Al Qawain	1	17,502
Far East	**9**	**15,886**
Australia	5	15,357
Japan	2	15,682
New Zealand	1	18,582
Pakistan	1	16,240
Non-Communist World	**94**	**16,775**
USSR	**15**	**16,400**

Soviet Deep Drilling

Despite use of poor equipment and generally obsolete drilling practices, the Soviet Union is making progress, and gaining experience in drilling below 15,000 ft. With many old, shallow oil and gas fields being depleted, the USSR is urging its oil industry to drill deeper. Much money and effort are being directed to deep drilling.

Russians still stress use of domestically made turbodrills, which contain poor steel, perform badly, and average only about 345 to 985 ft (105 to 300 m) per rig per month. Some average only 230 ft (70 m) per month at 15,000 ft and below.

Still, some favorable results are being obtained because of massive efforts. Good results are reported in the old Baku oil province, both offshore in the Caspian Sea and in adjacent onshore areas. Production from Pliocene sandstones there may be comparable to U.S. Gulf Coast Pliocene production. These offshore wells are located north and east of the Apsheron Peninsula.

Development wells are being drilled to 19,030-685 ft (5,800-6,000 m) offshore Sangachaly, Duranyy, Bulla, Bulla Island, and other fields. These wells require 2 to 3 years to complete.

Soviets found the 28th of April field about 6 years ago, tested it in 1980, and started commercial production by late 1981. They claim it to be the world's deepest offshore producing field, with one gas well flowing as much as 35 MMcfd, and 14 oil wells yielding 13,000 b/d by mid-1983.

Bulla More is a huge offshore gas-condensate field, found in 1973. By 1983, it had 30 producing wells. Well 16 reached 19,865 ft (6,055 m) TD, and tested 24.5 MMcfd and 1,460 b/d of condensate from 16,798-19,865 ft (5,120-6,055 m). Average total depth for the field is 19,717 ft (6,010 m). The deepest pool was found at 20,138-249 ft (6,138-172 m) in June 1982, and a deeper test is being drilled. Bulla More reserves are put at 5.1 tcf, plus 290 million bbl of condensate. A late 1983 well found 1,000 b/d production at 20,111 ft (6,130 m), with gas flow of 2.5 MMcfd.

In the North Caucasus, Groznyy district, Terek basin, a record well reached 17,287 ft (5,269 m) in Triassic in 1980. Of 16 wells programmed for 14,435-ft (4,400-m) completion in 1980, 13 failed to reach objec-

Worldwide Deep Drilling
Wells drilled to 15,000 ft or deeper

Average well depth	16,856 ft 5,138 m
Average cost well	$15,907,894 ($944 ft) ($3,096 m)
Average mud cost*	$813,270 ($48 ft) ($158 m)
Average bits well*	53 (366 ft bit) (112 m bit)
Success ratio*	35% (94 wells)
Exploratory success ratio	31% (86 wells)
Development success ratio	75% (8 wells)
Total costs: Mud	$76,447,349
Drilling	$1,360,133,822
Completion	$171,994,831
Total costs**	$1,733,960,440
Total footage	1,837,271 ft (560,007 m)

*Mud costs, bit use data, and success ratios of Communist countries are excluded from this tabulation, since they generally are not published in up-to-date form.

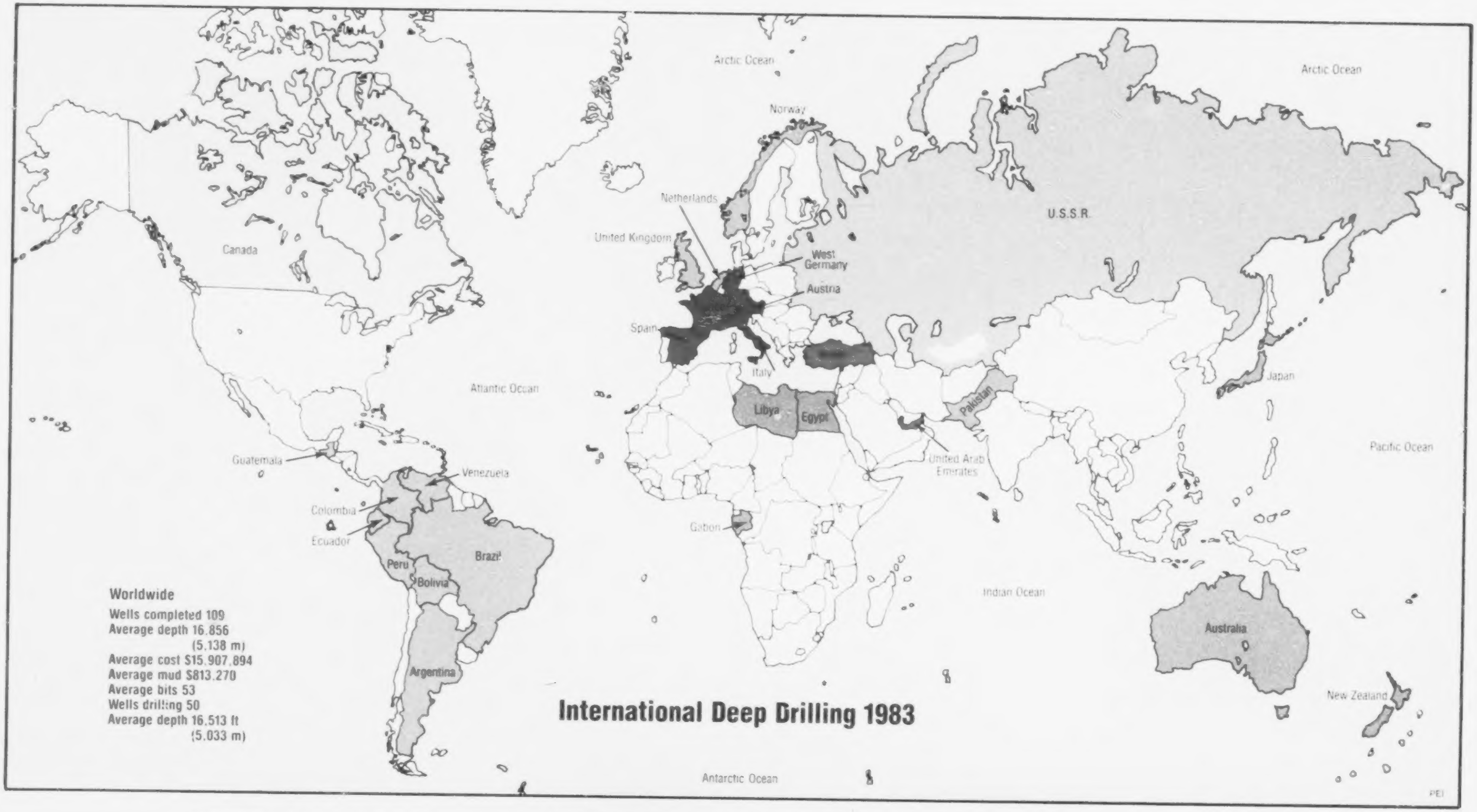
**Total costs throughout this article include drilling and completion costs, as well as other incremental costs, such as rig mobilization and demobilization as may be appropriate.

	Canada	USSR
Average well depth	19,001 ft (5,792 m)	17,285 ft (5,268 m)
Average cost well	$46,476,946 ($2,446 ft) ($8,025 m)	$11,213,333
Average mud cost	$1,806,094 ($95 ft) ($312 m)	
Average bits well	57.6 (330 ft bit) (101 m bit)	
Success ratio	38% (8 wells)	
Exploratory success ratio	38% (8 wells)	
Development success ratio	—	
Total costs: Mud	$14,448,750	
Drilling	$265,714,787	
Completion	$103,189,916	
Total costs	$371,815,568	$168,200,000*
Total footage	152,009 ft (46,333 m)	

*Estimated cost figures, based on 15 wells drilled, excluding superdeep stratigraphic drilling.

This is the Rowan Drilling Co. submersible drilling barge, Morgan City, drilling in Balikpapan, Indonesia. The Morgan City can operate in 26 ft of water depth, to 25,000-ft depths. (Photo courtesy of Rowan Drilling Co., Houston, Tex.)

International Deep Drilling 1983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Norway
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Canada
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Guatemala
Venezuela
Colombia
Ecuador
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Peru
Bolivia
Argentina
Libya
Egypt
Gabon
Pakistan
United Arab Emirates
Japan
Pacific Ocean
Indian Ocean
Australia
New Zealand
Antarctic Ocean
PEI

Worldwide

Wells completed 109
Average depth 16.856
(5.138 m)
Average cost $15.907.894
Average mud $813.270
Average bits 53
Wells drilling 50
Average depth 16.513 ft
(5.033 m)

Canada

Wells completed 8
Average depth 19.001 ft
(5.792 m)
Average cost $46.476.946
Averge mud $1.806.094
Average bits 58
Wells drilling 4
Average depth 17.190 ft
(5.240 m)

Latin America

Wells completed 31
Average depth 16,817 ft
(5,126 m)
Average cost $12,929,018
Average mud $866,857
Average bits 61
Wells drilling 6
Average depth 16,394 ft
(4,997 m)

North Sea

Wells completed 18
Average depth 15,983 ft
(4,872 m)
Average cost $15,055,638
Average mud $610,914
Average bits 34
Wells drilling 5
Average depth 16,386 ft
(4,995 m)

[illegible]

Africa

Wells completed 6
Average depth 15,655 ft
(4,772 m)
Average cost $17,784,454
Average mud $1,092,698
Average bits 42
Wells drilling 2
Average depth 15,371 ft
(4,685 m)

Middle East

Wells completed [illegible]
Average depth [illegible] ft
([illegible] m)
Average cost [illegible]
Average mud [illegible]
Average bits [illegible]
Wells drilling [illegible]
Average depth [illegible] ft
([illegible] m)

Far East

Wells completed 8
Average depth 15,886 ft
(4,842 m)
Average cost $13,633,022
Average mud $428,924
Average bits 37
Wells drilling 4
Average depth 16,112 ft
(4,911 m)

USSR

Wells completed 15
Average depth 17,285 ft
(5,268 m)
Average cost $11,213,333

tives, and were junked and abandoned because of faulty equipment. Three reached the objective. One was a discovery. Average time to drill was 4½ years per completed well.

In the Dnepr-Donets Permo-Carboniferous sandstone graben, Ukraine, a 15,252-ft (4,649-m) test at Sagadayak salt dome required 34 months to drill. Only two of the 12 wells reached target depth of 16,932 to 17,195 ft (5,161-241 m).

USSR recent deep drilling developments

Area, district, or field	Approx. depth, ft	Approx. cost/well, converted to U.S.$
Offshore Caspian Sea, NE of Apsheron Peninsula, at Baku	16,800-22,150	13,500,000-25,000,000
Cheleken district, onshore E of Caspian Sea, Kara-Tepe field	17,225	8,200,000
Timan-Pechora basin, Komi Republic, Vuktyl gas field	18,000	9,000,000
North Caspian basin, lower Volga area	16,400	8,500,000
Southern Volga-Urals basin, Volgograd district, Sudovsk field	15,400	8,000,000
West Siberian basin, Urengoy gas field	16,400	9,000,000
Vilyuy basin, eastern Siberia, gas fields	15,750	10,000,000
Dagestan area, north of North Caucasus basin	18,000	10,000,000

In the Timan-Pechora basin, Komi Republic, by January 1983 six tests had been drilled below 18,044 ft (5,500 m) at Vuktyl gas field. On a fixed platform in the Pechora Sea, the first 16,400-ft (5,000-m) well was completed early in 1983.

The North Caspian basin, Astrakhan gas field, found in 1976, is huge, with up to 40% H_2S and CO_2 content. Production depth is 9,186 to 16,400 ft (2,800 to 5,000 m). In June 1982, there were a reported 45 rigs drilling 5,000-m wells in the southwestern part of the North Caspian basin. At Kenkiyak and Aransay fields, oil has been found below salt, as deep as 15,092 ft (4,600 m). Deep drilling plays are under way also on the Emba uplift.

In Southeast Turkmenia, gas has been found as deep as 16,400 ft (5,000 m) at Dauletabad-Donmez gas field.

In the West Siberian basin, several deep plays are under way. At Urengoy, the world's largest gas field (262.5 tcf proved in Cretaceous sandstones), the deepest well was completed in May 1983 at 16,473 ft (5,021 m).

Well costs are published in Soviet drilling and economic journals, generally from 1½ to 3 years or more after completion. No doubt such costs vary greatly by areas, depending on whether drilling has long been done in a favorable environment, such as the Baku-

	Latin America	North Sea	Middle East
Average well depth	16,817 ft 5,126 m	15,983 ft 4,872 m	16,219 ft 4,944 m
Average cost/well	$12,929,018 ($769/ft) ($2,522/m)	$15,055,638 ($942/ft) ($3,090/m)	$12,974,433 ($800/ft) ($2,625/m)
Average mud cost	$866,857 ($52/ft) ($169/m)	$610,914 ($38/ft) ($125/m)	$905,000 ($56/ft) ($184/m)
Average bits/well	61.0 (276 ft/bit) (84 m/bit)	33.5 (477 ft/bit) (145 m/bit)	48.5 (334 ft/bit) (102 m/bit)
Success ratio	23% (31 wells)	39% (18 wells)	83% (6 wells)
Exploratory success ratio	23% (31 wells)	29% (14 wells)	80% (5 wells)
Development success ratio	—	75% (4 wells)	100% (1 well)
Total costs: Mud	$26,872,571	$10,996,450	$5,430,000
Drilling	$387,617,377	$245,004,487	$68,408,164
Completion	$7,525,000	$21,769,000	$7,438,432
Total costs	$400,799,572	$271,001,487	$77,846,596
Total footage	521,316 ft (158,899 m)	287,699 ft (87,692 m)	97,313 ft (29,661 m)

	Western Europe Other than North Sea	Africa	Far East
Average well depth	17,554 ft 5,351 m	15,655 ft 4,772 m	15,886 ft 4,842 m
Average cost/well	$13,686,926 ($780/ft) ($2,558/m)	$17,784,454 ($1,136/ft) ($3,727/m)	$13,633,022 ($858/ft) ($2,816/m)
Average mud cost	$551,516 ($31/ft) ($103/m)	$1,092,698 ($70/ft) ($230/m)	$428,924 ($27/ft) ($89/m)
Average bits/well	72.2 (243 ft/bit) (74 m/bit)	42.0 (373 ft/bit) (114 m/bit)	37.4 (425 ft/bit) (129 m/bit)
Success ratio	24% (17 wells)	40% (5 wells)	56% (9 wells)
Exploratory success ratio	14% (14 wells)	40% (5 wells)	56% (9 wells)
Development success ratio	67% (3 wells)	—	—
Total costs: Mud	$9,375,770	$5,463,488	$3,860,320
Drilling	$206,692,057	$71,906,750	$114,790,200
Completion	$18,686,101	$5,861,382	$7,525,000
Total costs	$232,677,750	$88,922,272	$122,697,200
Total footage	298,411 ft (90,957 m)	78,275 ft (23,859 m)	142,973 ft (43,579 m)

1983 International Deep Well Operators

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Amoco (UK) Exploration Co.
ARCO International Oil and Gas Co.
The British Petroleum Co. plc
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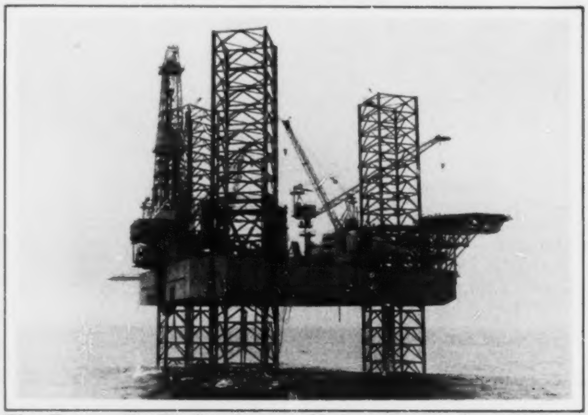

The Rowan Gorilla I, a huge self-elevating platform drilling unit with 503-ft legs, is shown in service offshore in the Sable Island area, offshore Halifax, Nova Scotia, Canada. (Photo courtesy of Rowan Drilling Co., Houston, Tex.)

1983 International Deep Well Contractors*

Arab Drilling and Workover Co. (Adwoc)
Braspetro
Compañia General de Sondeos
Dolphin
Foramer
Forasol
Forex Neptune
Global Marine Drilling Co.
Ideco
Jebsens Offshore Drilling Ltd.
Maersk Drilling Services
Morco
National Drilling Co. of Libya
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Olsen
OMV Aktiengesellschaft
Parker Drilling Co.
Pergemine
Petroleo Brasileiro S. A. (Petrobras)
Reading & Bates Drilling Co.
Rowan Drilling Co.
Saipem
Santa Fe Drilling Co.
Sedco
Sonat Offshore Drilling Inc.
Sonpetrol
Spartan Drilling Ltd.
Texpet
W. Wilhelmsen
Wodeco
Zapata Off-Shore Co.

*Specifically identified by operators responding to PEI's deep drilling survey

Caspian area, or in remote, harsh environments, such as in most of Siberia. Cost figures published here are estimated from limited data available.

Other Promising Deep Basins

Egypt has begun deep drilling in the Gulf of Suez region, with one well completed last year. In Israel, good oil prospects exist in the Dead Sea area, in block-faulted sediments at 20,000 ft or deeper. Nigeria is apt to have more deep drilling in the future, with 40,000 ft or more of sediments believed to be present in the Niger River delta and offshore.

Many offshore deepwater areas on marine abyssal plains could become deep drilling trends, as deepsea drilling technology progresses.

Guatemala is undergoing a deep drilling play. Last November, Texaco Exploration Guatemala Inc. spudded a 17,000-ft test which was drilling at year-end.

Acknowledgement. The author thanks the many individuals and companies who aided in preparation of this report. Most raw well data were provided by Petroconsultants, arranged through the Houston, Tex., office by Joseph Summa and Richard Fletcher. Most data on the USSR were provided by A. A. Meyerhoff of Tulsa, Okla.

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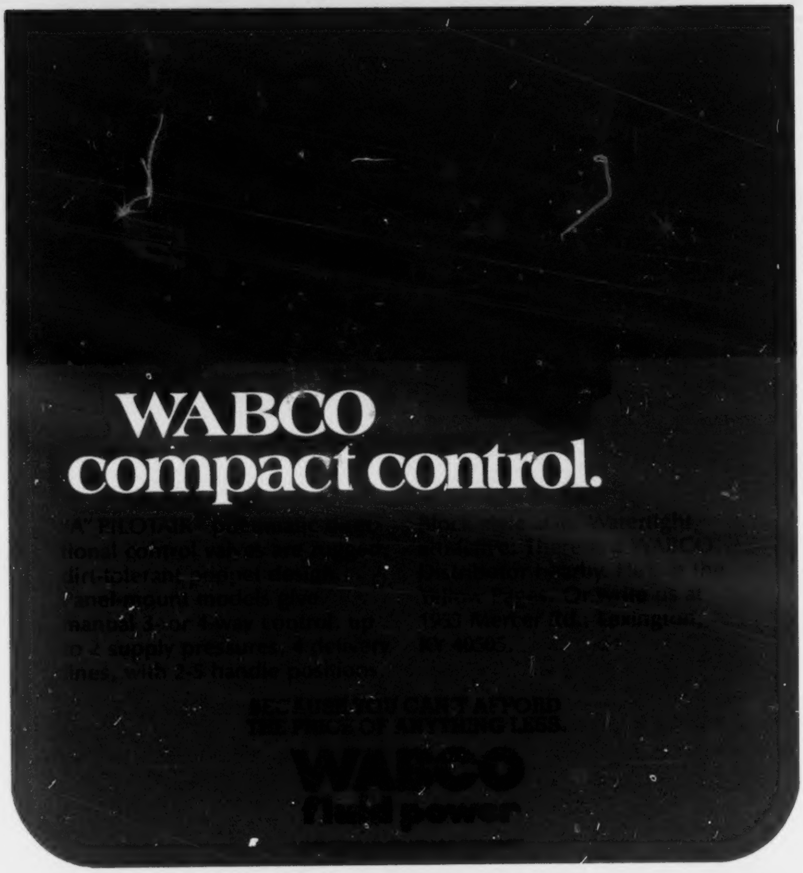

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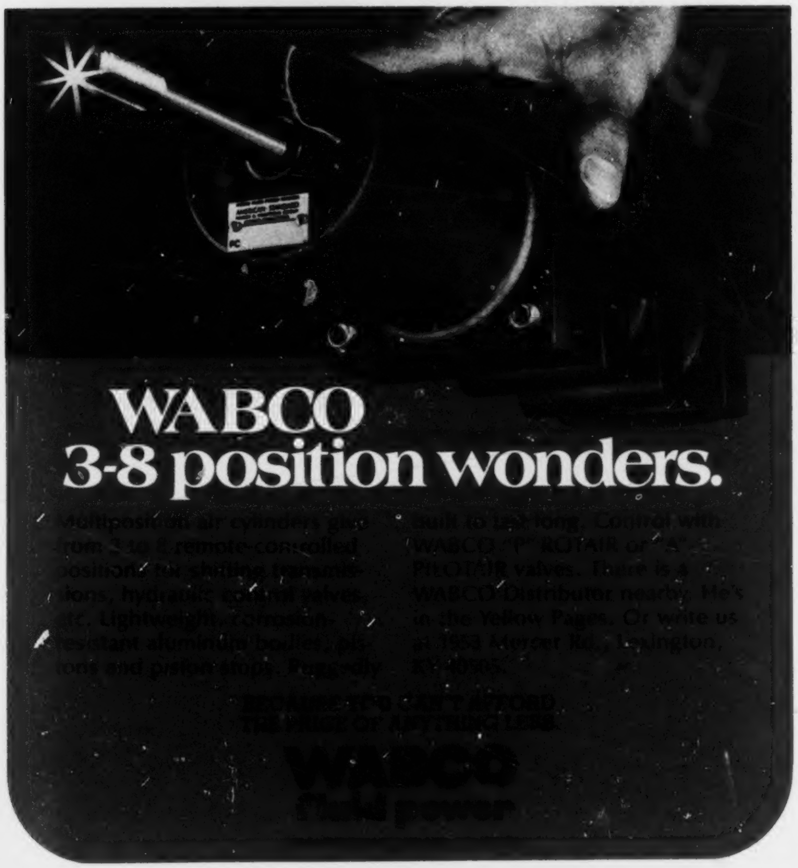

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International Count Down By 100 Rigs

The international rotary rig count was a little more than 100 rigs behind the year-earlier count in March, after having been more than 200 rigs behind in January. But it is too early to tell whether world drilling is ready to stage a recovery.

Biggest loser so far this year continues to be Algeria, where drilling is down by almost 70%. This, in turn, has caused Africa to be the main culprit among regions for the decline in Hughes Tool Co.'s International Rotary Drilling Rig Report. Drilling is down in all regions, however, except for the South Pacific.

International Rotary Rig Report, prepared by Hughes Tool Co.
(Figures in parentheses indicate how many of each country's rigs are offshore rigs.)

	March 1983	Feb. 1984	March 1984
Africa			
Algeria	80	30	25
Angola	13(9)	5(3)	5(3)
Benin	1(1)	1(1)	1(1)
Cameroon	6(6)	4(4)	4(4)
Gabon	9(8)	9(8)	8(7)
Ivory Coast	2(2)	2(2)	2(2)
Libya	23(2)	28(2)	29(2)
Morocco	5	5	4
Niger	1	1	1
Nigeria	19(10)	13(5)	10(6)
Rep. of Congo	5(5)	4(4)	4(4)
Rep. of Zaire	2(1)	2(1)	2(1)
South Africa	2(2)	2(2)	2(2)
Sudan	5(1)	3	3
Tanzania	0	1	1
Tunisia	11(3)	6(1)	6(1)
	184(50)	116(33)	107(33)
Europe			
Austria	9	8	8
Denmark	5(4)	3(3)	3(3)
France	15(1)	21(1)	21(1)
Germany	30	16	15
Greece	3(1)	4(1)	4(1)
Holland	16(11)	17(9)	17(9)
Ireland	0	1(1)	1(1)
Italy	33(7)	25(7)	23(6)
Norway	10(10)	8(8)	11(11)
Portugal	1	0	0
Spain	9(5)	7(3)	5(2)
Switzerland	1	0	0
United Kingdom	39(1)	49(45)	57(54)
Yugoslavia	25	21(2)	27(2)
	196(77)	180(80)	190(90)
Far East			
Bangladesh	1	3	3
Brunei	10(7)	9(6)	8(6)
Burma	41(1)	33(1)	33(1)
India	54(12)	57(16)	56(16)
Indonesia	87(23)	86(28)	81(24)
Japan	18(2)	22(3)	18(3)
Korea	0	1	1
Malaysia	9(9)	9(9)	9(9)

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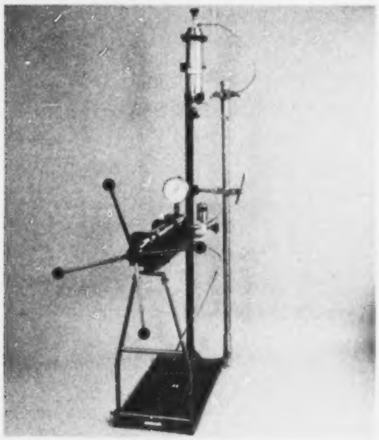

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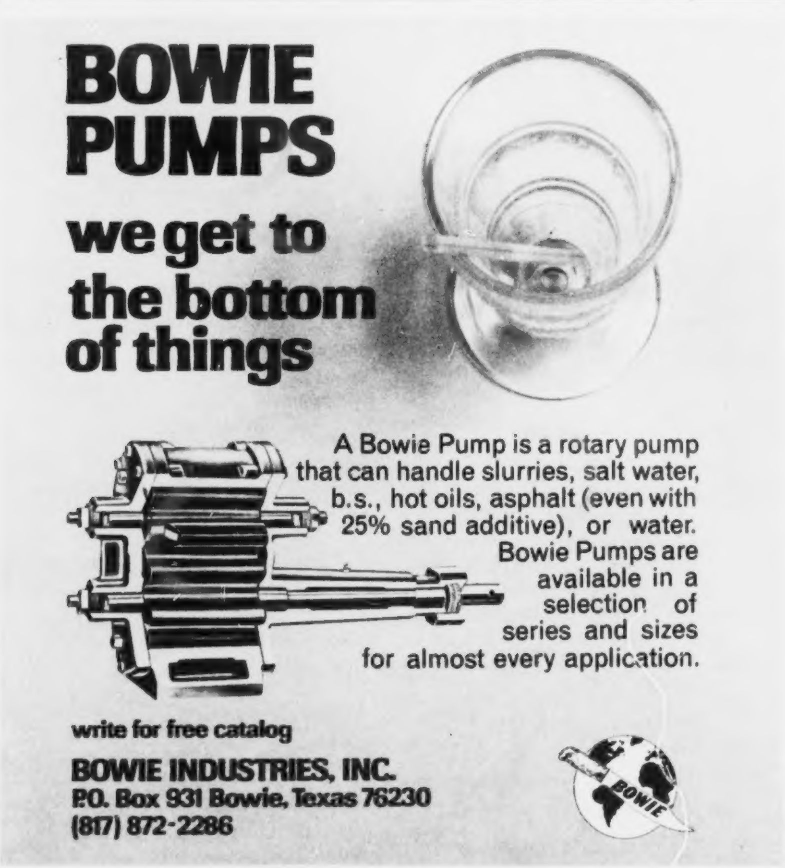
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Pakistan	17	17	17
Philippines	9	4(2)	4(1)
Taiwan	0	2	5
Thailand	11(6)	11(6)	11(6)
	257(60)	253(71)	246(66)
Latin America			
Argentina	63(1)	82	82
Barbados	1	1	1
Bolivia	6	6	6
Brazil	98(34)	67(24)	65(21)
Chile	6(3)	5(3)	5(3)
Colombia	18	14	16
Costa Rica	1	1	1
Ecuador	5	6	6
Guatemala	3	1	1
Mexico	187(22)	194(28)	194(29)
Peru	15(6)	16(6)	16(6)
Trinidad	11(4)	9(4)	9(4)
Venezuela	46(14)	33(10)	31(10)
	460(84)	435(75)	433(73)
Middle East			
Abu Dhabi	40(26)	39(19)	30(19)
Bahrain	1	1	0
Dubai	5(3)	7(3)	6(2)
Egypt	35(21)	43(18)	42(23)
Iran	2	20(2)	20(2)
Iraq	22	18	18
Jordan	3	3	3
Kuwait	5	5(1)	4
Oman	10	10	10(1)
Qatar	2(2)	2(1)	2(1)
Ras Al Khaimah	1	0	0
Saudi Arabia	25(12)	18(8)	16(7)
Syria	15	19	19
Turkey	31	24	24
Umm Al Qaiwain	1	0	0
Southern Yeman	0	1	1
	198(64)	201(59)	195(55)
South Pacific			
Australia	24(12)	30(10)	30(10)
New Zealand	2	3(2)	3(2)
Papua New Guinea	1(1)	2	2
	27(13)	35(12)	35(12)
Totals	1.322 (348)	1.220 (330)	1.206 (329)

Letters

TO THE EDITOR:

Please refer to your article in News Hi-Lites for February 1984 (p. 2) on Loffland Brothers Co., who claim to hold the world record for holding the longest continuous contract with one company for drilling oil wells on land. Marine Drilling Co. has had continuous drilling contracts with Belco Petroleum Corp. of Peru, drilling slant and vertical wells from fixed platforms offshore Peru, since 1966.

We do not claim a world record, but we do feel that our continuous performance is worth mention.

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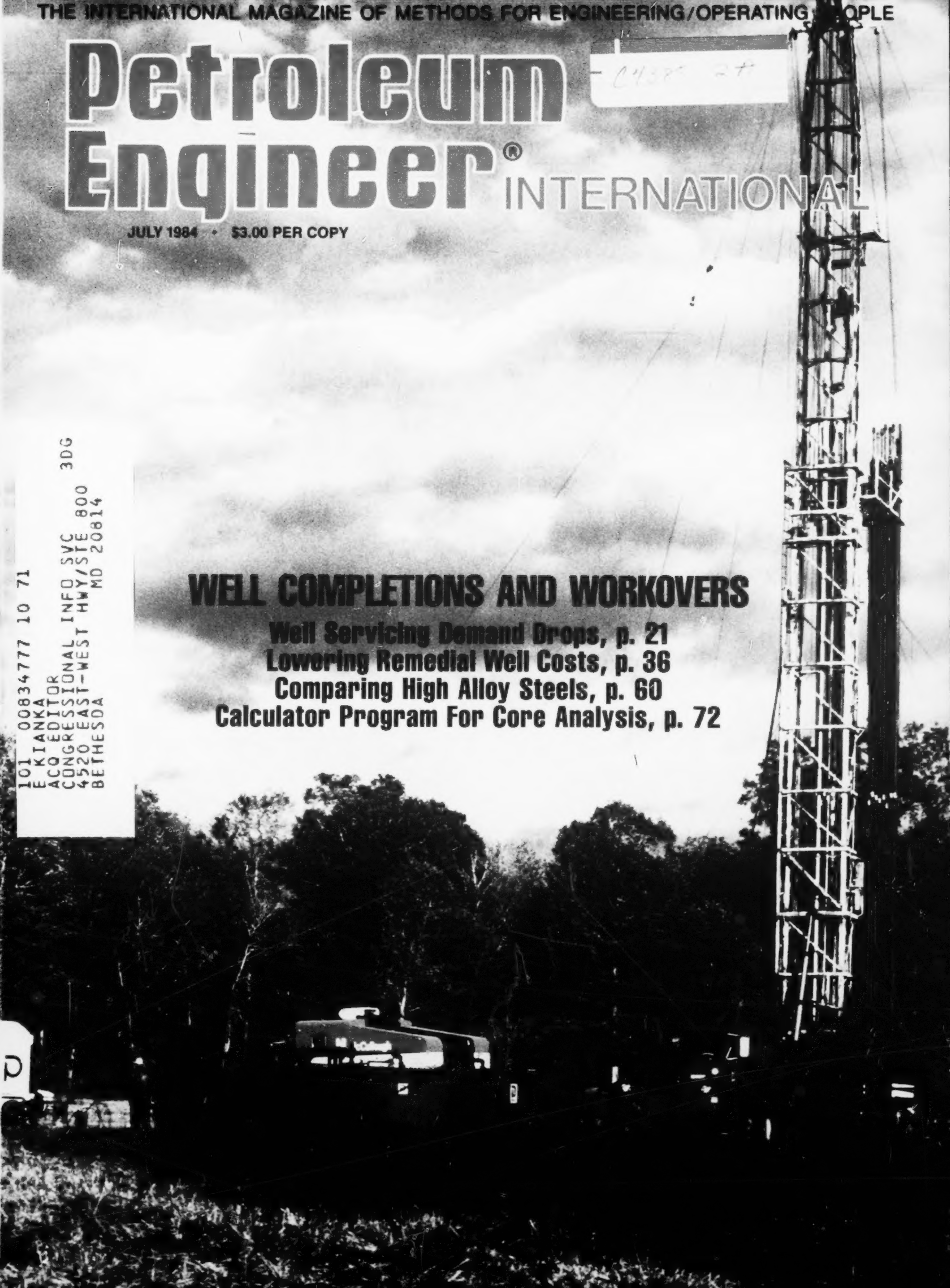

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Recovery Continues For U.S. Rotary Rig Count

U.S. drillers continued their spingtime recovery with nine straight weeks of increasing activity as of mid-June. That brought the average rig count for the year to 2,350, which is a far cry from the 2,700 rigs that were active at the beginning of 1984, but is better than the 2,119 average recorded for the first 24 weeks of 1983.

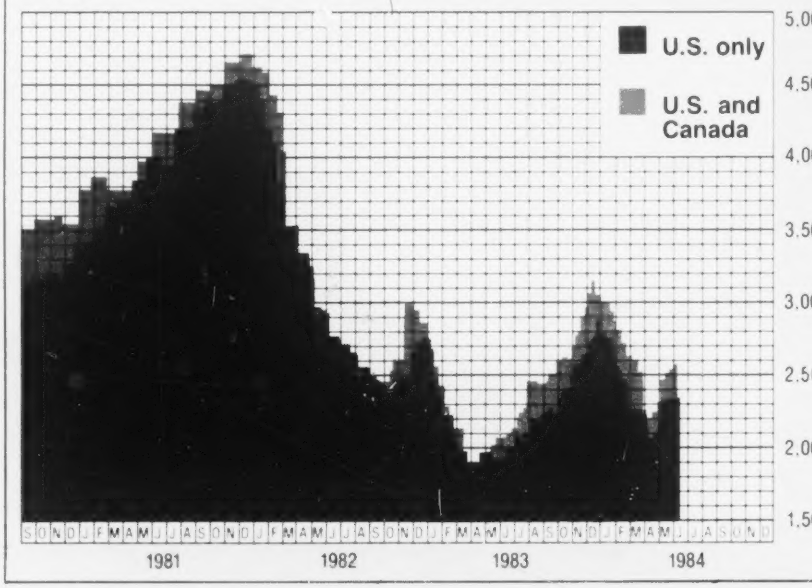
Texas continues to be the leader as far as rotary rig activity is concerned, with 855 rigs turning as of June 11. Oklahoma is second with 318. And Louisiana is a close third with 282. Other states in three figures include Kansas and Wyoming. California probably should be listed also, because the state was in three figures for 3 of the 4 weeks covered in this report.

U.S. offshore rig activity has been steady all year, with a little more than 200 rigs at work most of the time.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	May 21, 1984	May 29, 1984	June 4, 1984	June 11, 1984
Alabama				
Land	11	9	7	8
Inland Waters	2	2	2	2
Offshore	2	2	2	2
Alaska				
Land	9	8	9	9
Offshore	2	2	2	2
Total	11	10	11	11
Arkansas	21	25	25	25
Arizona	0	0	1	1
California				
Land	91	94	91	82
Offshore	16	15	16	14
Total	107	109	107	96
Colorado	42	50	39	44
Florida	2	3	3	3
Hawaii	1	1	1	1
Idaho	0	1	1	1
Illinois	48	52	52	53
Indiana	8	6	6	6
Kansas	132	129	130	132
Kentucky	8	9	9	12
North Louisiana	33	32	34	31
South Louisiana				
Inland Waters	48	49	46	51
Land	85	77	75	81
Offshore	118	111	114	119
, Total	284	269	269	282
Michigan	30	33	28	31
Mississippi	32	31	34	27
Montana	26	25	28	28
Nebraska	10	10	11	11
Nevada	6	6	6	7
New Jersey	1	1	1	1
New Mexico	76	71	75	73
New York	8	10	13	10
North Dakota	50	55	53	52
Ohio	46	45	46	40
Oklahoma	320	325	317	318
Pennsylvania	27	28	30	36
South Carolina	1	1	0	1
South Dakota	1	1	1	1
Texas				
Offshore	64	62	67	71
Inland Waters	6	7	6	8
Dist. 1-S. Central Tex.	12	14	13	14
Dist. 2-Middle Tex. Coast	35	29	34	30
Dist. 3-Upper Tex. Coast	92	94	100	108
Dist. 4-Lower Tex. Coast	78	75	72	72
Dist. 5-Northeast Tex.	36	35	34	34
Dist. 6-Far Northeast Tex.	70	72	70	71
Dist. 7B-N. Central Tex.	54	52	54	53
Dist. 7C-W. Central Tex.	60	55	51	49
Dist. 8-Far West Tex.	139	144	154	151
Dist. 8A-West Tex.	60	66	70	74
Dist. 9-North Tex	79	66	66	68
Dist. 10-Tex. Panhandle	52	53	50	52
Total	837	824	841	855
Utah	40	39	41	40
Virginia	3	3	3	3
West Virginia	39	39	37	43
Wyoming	83	98	98	105
Total U.S.	2,315	2,322	2,328	2,361
Canada	153	168	190	206
Canada-Offshore	13	13	14	14
U.S. and Canada	2,481	2,503	2,532	2,581



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by Steven D. Moore, Drilling Editor. Servicing costs in 1983 totaled just under $2.8 billion. That is 30% less than in 1981, when well servicing expenditures reached the $4-billion mark. See well servicing map on page 32.

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by Steve G. Weeks, Shell Western E&P Inc. Do not overlook the merits of plugging back a well bore with excessive bottomhole temperature, using available proppants and capping with cement. It can be most effective, with minimum expense.

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by Harrison T. Brundage, Gulf Coast Editor. Hard times remain, though the situation is improving, and the worst seems to be behind us. Surviving suppliers are lean and operating with minimum personnel and stores.

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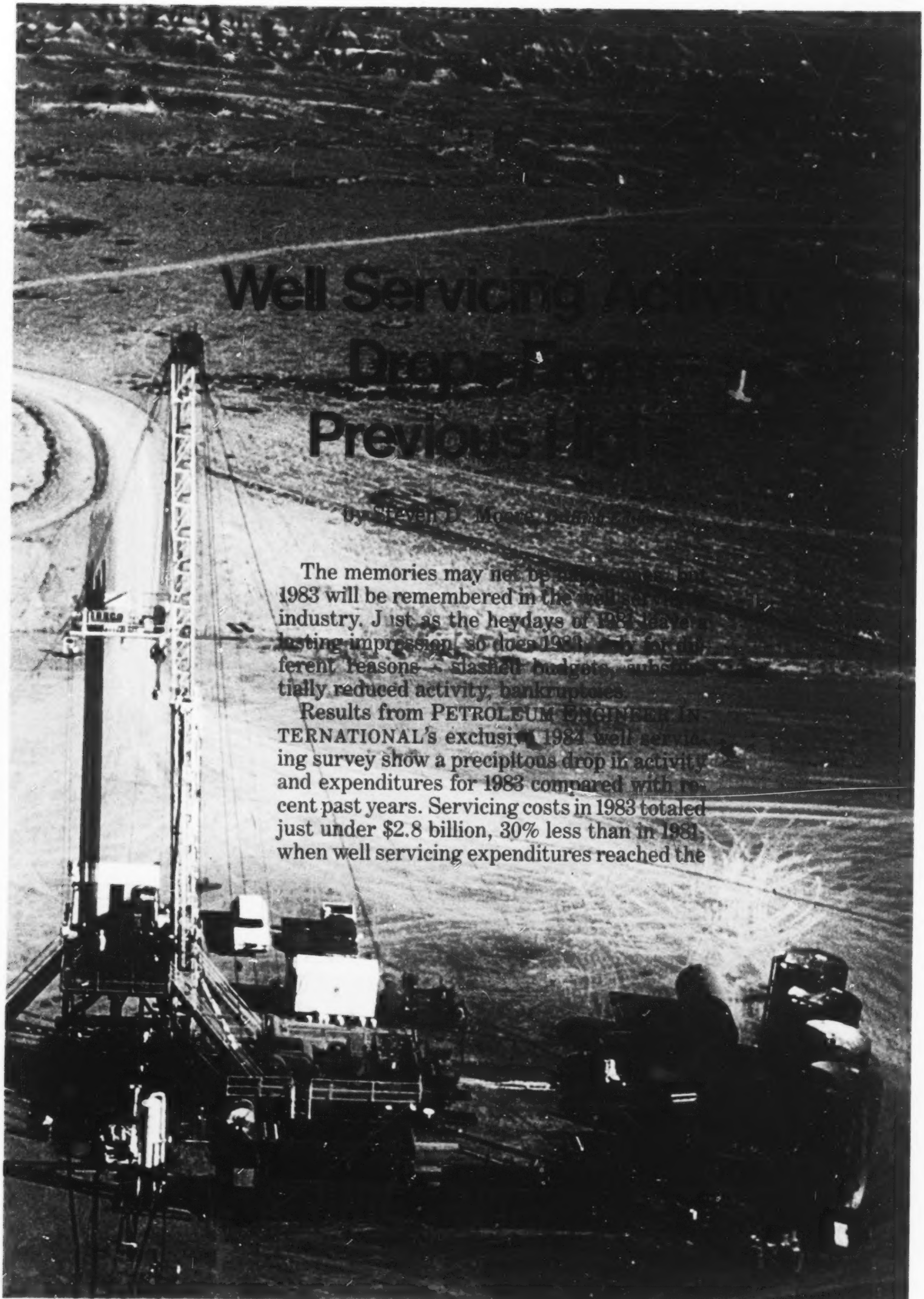
ABOUT THE COVER: The well servicing industry hopes for a recovery this year after 1983's slump. (Photo courtesy of Pool Co.)

NEXT MONTH: Technological achievements in European waters will be highlighted in the European Offshore Report in August.



Well Servicing Activity Drops From Previous High

by Steven D. Moore, [illegible]

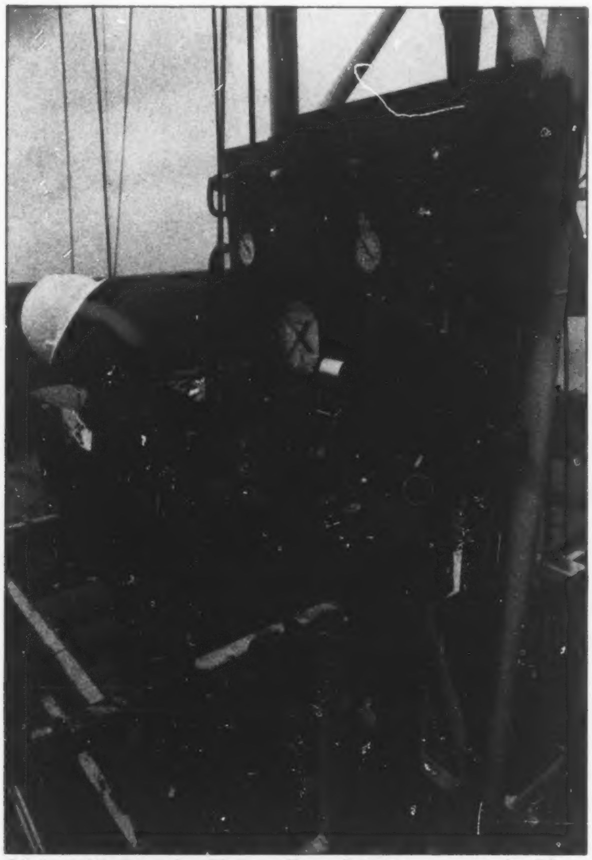
The memories may not be happy ones, but 1983 will be remembered in the well servicing industry. Just as the heydays of 1981 leave a lasting impression, so does 1983, only for different reasons — slashed budgets, substantially reduced activity, bankruptcies.

Results from PETROLEUM ENGINEER INTERNATIONAL's exclusive 1984 well servicing survey show a precipitous drop in activity and expenditures for 1983 compared with recent past years. Servicing costs in 1983 totaled just under $2.8 billion, 30% less than in 1981, when well servicing expenditures reached the

$4-billion mark. The projected 1984 budget is slightly over $3 billion.

As a group, operators didn't come close to spending the $3.6 billion they estimated they would spend when completing last year's survey. In fact, the $2.8 billion spent last year was the lowest amount since 1978 and the first time expenditures fell below $3 billion since 1980.

The downturn in spending is even more disheartening because 90,000 wells were added to the U.S. well population in the last 2 years.



Of the 869,872 active U.S. wells, only 31% were serviced last year, compared with 70% and 58% of the active wells in 1981 and 1982, respectively.

Lack of demand for well servicing was primarily to blame for reduced spending – recompletions, artificial lift repairs, tubular repairs, and remedial stimulations were all down. Only 31% of the 869,872 active wells last year were serviced or worked over, compared with 70% and 58% of the active wells in 1981 and 1982, respectively.

Comparing the amount of work done in 1981 and then 2 years later, in 1983, may be somewhat unfair, however. In 1981, money was readily available and easily spent. Operators committed to rejuvenating older and even abandoned wells, and many of these wells were outfitted with completely new equipment.

By 1983 the tables had turned. Oil prices had stagnated and the natural gas market was in disarray. Operators were forced to live with diminished cash flows, so a certain percentage of necessary well servicing was left undone. Also, many wells were in such good shape from total workovers during the preceding boom that well servicing was unwarranted, at least temporarily.

Thus, while 1981's well servicing activity set an unprecedented high, available work during 1983 was abnormally low. Just as the huge inventory of tubular goods has to be whittled down, the number of operable wells in good condition must be reduced before demand for well servicing will pick up significantly.

Another reason for reduced spending in 1983 was the competitive pricing structure – or lack of structure – created by the servicing contractors. With an expanded rig fleet, and expectations of 1981 activity levels through the coming decade, contractors soon found themselves with an inordinate oversupply of rigs. Wholesale price cutting quickly ensued.

As a result, operators enjoyed more well servicing per dollar than ever before. Operators quickly found that they didn't have to spend all the money allotted for well servicing to get the necessary work done. For the contractor, well servicing became a hard way of life.

PEI's annual well servicing survey is compiled from the responses of over 200 operating companies, both majors and independents. The survey monitors 1983 activity, as well as future budget estimates. As in the past, the survey is broken down into 11 different geographic areas. Tables 1 and 2 are tabulations of U.S. completion, workover, and servicing totals for 1983, followed by summaries of regional well servicing activity.

TABLE 1. Completion, workover, servicing summary, by region, 1983

Region	Total wells	Completion, recompletion	Total art. lift	Lift repair	New lift installation	Tubular repair	Frac/acid stimulation	Total budget, $M
U.S.(1)	869.872	72.994	606.474	293.468	33.997	47.000	26.815	2.789.510
Appalachia	139.817	7.251	71.542	20.256	3.281	6.291	544	118.844
California onshore	51.161	3.262	47.481	30.647	2.132	2.854	1.988	177.450
California offshore	1.846	170	1.582	515	108	80	18	33.320
Four Corners	15.695	822	2.217	1.267	215	195	130	26.681
Great Lakes	90.792	9.614	64.678	18.611	4.389	6.536	924	101.687
Gulf of Mexico	10.143	1,025	2.743	793	386	640	277	322.170
Louisiana onshore	42,048	5.335	24.168	14.175	1.357	1.245	1.079	222.013
Mid-Continent(2)	204.367	17.013	160.565	81.729	8.524	8.959	8.380	580.402
Rocky-Williston	36.745	4.929	24.201	14.044	1.767	3.525	2.392	248.396
Southeast	4.980	477	3.392	3.350	134	565	169	30.079
Texas(3)	272.278	23.096	203.878	108.081	11.704	16.110	10.914	928.468

(1) Excludes Alaska (2) Includes Texas Panhandle (3) Includes southeast New Mexico, excludes Texas Panhandle

Spending Way Down

With the exception of a slight increase in spending for offshore California, well servicing expenditures were down in the 11 geographic regions. The biggest percentage drop was in the Rocky-Williston area, where spending reached only $248 million, a 38% decrease from the previous year. Average well servicing costs declined from $12,370 per well in 1983 to $6,760 per well last year.

Texas operators once again spent the most money for well servicing. The group needed $928 million to service their wells, compared with $1.147 billion and $1.228 billion in 1982 and 1981, respectively. Although operators paid $100 million less for well servicing than they estimated last year, well servicing for Texas continues to represent one-third of the total U.S. budget.

The typical Texas well required $3,400 in well servicing, down from an average of $4,351 per well in 1982. Estimates for 1984 expenditures total $1.021 billion, a 10% increase over 1983. During 1984 operators plan to spend an average of $3,750 per well for servicing, an increase over last year, but still below 1981 and 1982 levels.

Second to Texas in spending was the Mid-Continent area, where operators paid $580 million for well servicing. Estimates for the coming year show a rebound to $643 million. Servicing the typical Mid-Continent well ran about $3,150 last year, compared with $3,486 in 1982.

The most expensive region for servicing a well continues to be the Gulf of Mexico. Offshore operators required $322 million in well servicing for just 10,143 wells. Average servicing cost per well dropped to $32,000 last year, but was still ahead of the second most expensive region – offshore California – where servicing averaged $18,000 per well.

Decreased spending in the Gulf was due in part to lower rates for barges, workover rigs, and supply boats. Operators anticipate slightly higher spending this year. The long-term outlook appears even better, particularly if exploratory and development drilling continue at accelerated paces.

At the bottom end of the well servicing industry was the Appalachia region, where spending dipped to $850 per well, 64% less than in 1981. In the boom years of 1980 and 1981, shut-in and marginal Appalachia wells were commonly worked over and serviced. But in the last 2 years, the practice has become practically nonexistent. In addition, plenty of recently shut-in wells have good used equipment that can be employed as replacement equipment in wells requiring servicing.

Total U.S. well servicing expenditures for 1983 were $2.789 billion, with Texas and the Mid-Continent accounting for 54% of the spending. For the nation, the typical operator spent an average of $3,200 per well for well servicing last year, compared with $5,100 per well in 1981.

(Continued)

Maintenance has been nonexistent for many companies in the oil fields for the past 2 years; usable equipment is probably wearing out faster than most people expect.

TABLE 2. Completions and recompletions, by region

Region	Wells Jan. 1, 1984		Exploration		Development		Recompletions		
	Oil	Gas	Oil	Gas	Oil	Gas	Same zone	New zone	Abandonments
U.S.(1)	645,262	224,610	1 31	1,838	34,977	14,965	10,848	7,535	20,452
Appalachia	72,265	67,552	178	436	3,114	2,876	526	121	2,853
California onshore	49,981	1,180	60	29	2,175	51	623	324	1,582
California offshore	1,843	3	0	1	125	2	38	4	9
Four Corners	2,463	13,232	34	30	220	326	153	59	320
Great Lakes	65,331	25,461	234	123	4,213	3,504	1,024	516	2,121
Gulf of Mexico	5,715	4,428	4	36	264	227	299	195	117
Louisiana	28,102	13,946	14	19	1,533	752	1,329	1,6[illegible]	1,301
Mid-Continent(2)	167,255	37,112	427	193	8,918	2,408	2,014	2,153	3,112
Rocky-Williston	26,890	9,855	254	119	1,398	2,075	759	324	1,136
Southeast	3,811	1,169	26	27	142	94	75	113	207
Texas(3)	221,606	50,672	700	825	12,875	2,650	4,008	2,038	8,421

(1) Excludes Alaska (2) Includes Texas Panhandle (3) Includes southeast New Mexico, excludes Texas Panhandle

Well Population Up

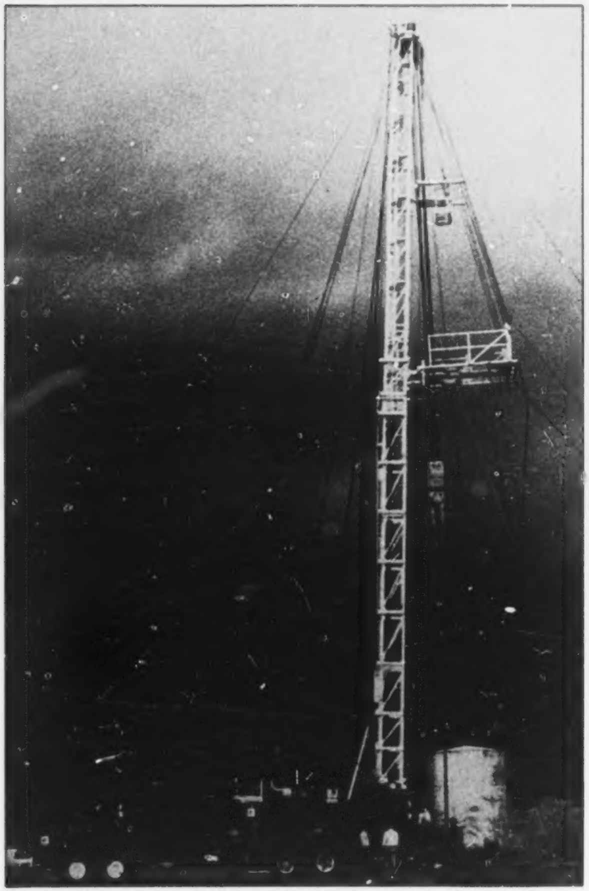
The number of well completions and recompletions has remained steady during the last 3 years. Operators completed 53,711 wells last year, down from 56,204 wells in 1982. Oil well completions slipped to 36,908 wells from 37,821 wells in 1982 – but well ahead of the 26,901 wells completed in 1980. Gas well completions also fell last year to 16,803 wells, down from 18,383 wells in 1982. The real downturn came in the number of recompletions. Recompletions dropped 19% from 22,632 wells in 1982 to 18,383 wells last year.

Meanwhile, the total U.S. well population grew for the ninth straight year. At year's end, 869,872 wells were capable of producing oil or gas, a 4% rise over the previous year.

Well abandonments jumped 80% over 1982 to 20,452 wells. The number seems more in line with historical trends, after several years of relatively few abandonments when marginal wells were not plugged and abandoned but serviced.

Total wells on artificial lift in 1983 reached another all-time high of 606,447 wells, 9% increase over 1982. In all, approximately 94% of U.S. oil wells are produced with some type of artificial lift.

Again, Texas led in completions and recompletions last year. Completed and recompleted wells in Texas totaled 23,096, about the same as 1982. Completions and recompletions in the Mid-Continent, the second most active area, dropped slightly last year, from 17,288 wells to 17,013 wells.


The well servicing industry has twice as much capacity as 5 years ago and a marketplace half the size it was in 1981.

Tubular repairs were down considerably last year. Only an estimated 47,000 jobs were performed in 1983, a substantial drop from 68,599 repairs in 1982. Tubing repairs outdistanced casing repairs 6 to 1. The number of tubular repairs in Texas stayed level with other years, but in the Mid-Continent and Great Lakes, tubular repairs were off by 50%.

Remedial acidizing and fracturing jobs also were off last year. Stimulation fell to below 27,000 jobs from 33,000 jobs in 1982. Stimulating gas wells has slowed considerably because of the natural gas bubble. Areas most active in stimulation were Texas, the Mid-Continent, the Rockies, and onshore California.

Competition among servicing companies was and is just as fierce as with the contractors. A large oversupply of trucks and equipment triggered price cutting as companies tried to maintain market share.

Rod Pumping

Conventional rod pumping continues to dominate the artificial lift market – more than 85% of oil wells on artificial lift use rod pumps. Last year, over 31,000 wells were equipped with rod pumps, about the same as in 1982 and 1981.

Even though demand for rod pumping equipment has remained steady, manufacturers of rod pumps, sucker rods, and pumping jacks are under pressure from their competitors. Overcapacity of manufacturing facilities plagues the market. Manufacturers, like servicing contractors, are discounting heavily to keep cash flow going. Lenient banks are floating insolvent manufacturers, just like drilling and servicing contractors.

Presently, 80% of sucker rods sold are for new installations; the other 20% go for repair and replacement. A catch-22 situation has developed in the sucker rod replacement market: many operators are replacing the entire sucker rod string during remedial work because sucker rods are so inexpensive.

Interestingly, complete sucker rod strings were installed in older wells during the boom years, too, but for a different reason. Well servicing and equipment costs were so high that operators couldn't afford to bring a well servicing rig to the well a second time.

Fiberglass sucker rods have found a small niche in the industry, but too many manufacturers vie for the limited market. Attempts to market aluminum sucker rods apparently have been unsuccessful.

Rod pump and sucker rod repairs were down from 1982 levels. Rod pump repairs fell from 207,000 in 1982 to 167,000 last year, and sucker rod jobs declined to 102,000 repairs or replacements from 130,000 jobs during 1982. Following historical trends, rod pump repairs ran well ahead of sucker rod replacements.

In 1981, 82% of rod pumping wells required some type of rod pump or sucker rod repair or replacement. By 1982, the percentage of rod pumping wells that required servicing dropped to 64%. Last year servicing demand fell even further to 50%. The rod pulling business should be improving slightly, but as long as oil prices remain stable, there won't be any great urgency to service wells.

(Continued)

	Total U.S.	Appalachia	California onshore
Abandoned (old wells)	20,452	2,853	1,582
Recompletions – same reservoir	10,848	526	623
Recompletions – different reservoir	7,535	121	324
Stimulation – acid or frac	26,815	544	1,988
Tubing repair or replacement	40,380	5,593	2,630
Casing repair	6,620	698	224
Rod pump repair	166,953	15,024	16,646
Sucker rod work	102,134	5,223	10,939
New rod pump installation	31,433	3,259	1,899
Submersible pump repair	8,471	—	435
New submersible pump installation	1,325	—	123
Hydraulic pump repair	10,413	—	2,283
New hydraulic pump installation	304	—	89
Gas lift repair	5,487	9	344
New gas lift installation	935	22	21

	California offshore	Four Corners	Great Lakes
Abandoned (old wells)	9	320	2,121
Recompletions – same reservoir	38	153	1,024
Recompletions – different reservoir	4	59	516
Stimulation – acid or frac	18	130	924
Tubing repair or replacement	56	172	5,619
Casing repair	24	23	917
Rod pump repair	—	727	12,413
Sucker rod work	—	477	6,076
New rod pump installation	—	200	4,381
Submersible pump repair	375	31	95
New submersible pump installation	91	4	6
Hydraulic pump repair	124	13	27
New hydraulic pump installation	5	1	2
Gas lift repair	16	19	—
New gas lift installation	12	10	—

Other Artificial Lifts

Demand for other types of artificial lifts – submersible pumps, hydraulic pumps, and gas lift – changed little during the past 2 years. Of the three, electric submersible pumps are the most popular choice.

In the coming decade, water cuts in average U.S. wells will increase dramatically – an operator will produce more water for every barrel of oil. Back in the '60s, 2 bbl of water typically were produced for every barrel of oil, but already in some areas – particularly onshore California – water cuts are as high as 20 to 1. In the future, more submersible pumps will be required.

Another positive trend in submersible pump usage is increased life expectancy – pumps are lasting longer between failures. The main reason is the advent of the variable speed drive, which reduces excessive wear at startup. Also, the quality of electric cables has improved significantly.

Hydraulic pumps are making a very small dent in the overall market, but the long-term outlook is good. The most likely candidates for hydraulic pumps are wells that are without access to electricity, have corrosive environments, or are fairly deep. Jet pumps seem more popular than reciprocating pumps because of lower maintenance costs, although operating costs are slightly higher.

Gas lift has found its niche in the market, as well. Typically operators will select gas lift if the field has a high GOR and no available means for marketing the gas. Obviously the Gulf of Mexico and Gulf Coast remain gas lift's strongest markets.

Outlook For 1984

The current well servicing situation is basically this: contractors, manufacturers, and servicing companies, all with twice as much capacity as 5 years ago, looking for work in a marketplace half the size it was in 1981.

For any significant improvement in utilization rates, either a stimulus for more work must develop – that is, higher oil and gas prices – or excess inventory must be worn down. Eventually the two lines will intersect again and the industry will return to profitability, but how long this will take is anyone's guess.

Most of the fly-by-night companies that entered the industry during the boom are long gone. Those who remain were around long before the boom and plan to hang on through the bad times. Even many of the companies emerging from bankruptcy proceedings plan to return to the industry.

(Continued)

	Gulf of Mexico (offshore only)	Louisiana	Mid-Continent
Abandoned (old wells)	217	1,301	4,285
Recompletions – same reservoir	299	1,329	2,014
Recompletions – different reservoir	195	1,688	2,153
Stimulation – acid or frac	277	1,079	8,380
Tubing repair or replacement	352	965	7,519
Casing repair	288	280	1,440
Rod pump repair	—	7,630	46,831
Sucker rod work	—	4,496	31,778
New rod pump installation	—	1,070	8,127
Submersible pump repair	—	589	2,566
New submersible pump installation	—	97	362
Hydraulic pump repair	—	407	458
New hydraulic pump installation	—	22	18
Gas lift repair	793	1,053	96
New gas lift installation	386	168	17

	Rocky Mountains-Williston Basin	Southeast	Texas
Abandoned (old wells)	1,136	207	6,421
Recompletions – same reservoir	759	75	4,008
Recompletions – different reservoir	324	113	2,038
Stimulation – acid or frac	2,392	169	10,914
Tubing repair or replacement	3,189	490	13,795
Casing repair	336	75	2,315
Rod pump repair	6,781	949	59,952
Sucker rod work	3,516	644	38,985
New rod pump installation	1,373	93	11,031
Submersible pump repair	1,226	42	3,112
New submersible pump installation	266	21	355
Hydraulic pump repair	2,320	1,673	3,108
New hydraulic pump installation	93	20	54
Gas lift repair	201	42	2,924
New gas lift installation	35	—	264

Recently, several large financial institutions committed substantial sums of money to teetering contractors. Most contractors have half to two-thirds of their fleet financed – in other words, banks are into the well servicing industry as deep, if not deeper, than the contractors themselves.

Even though a contractor is mortgaged to the hilt and can't possibly cover his loan commitments, he has a willing partner with his bank. As long as the contractor can pay a little interest on his notes – so the bank doesn't have to claim the loan as nonperforming and thus set aside lendable reserves to cover it – the banks are willing to "let it ride". Basically, what's a bank going to do with all those rigs?

This banking strategy is not exclusively for contractors, but permeates every facet of the industry.

Ironically, the best hope for the industry at present appears to be the wearing down of inventory, including the rig fleet. Maintenance – the largest variable expense in any operation – has been nonexistent for many companies in the oil fields for the past 2 years. Usable equipment is probably wearing down faster than most people anticipate. While the Guiberson well servicing rig count shows the rig utilization rate hovering around 50%, chances are many of those idle rigs have deteriorated to the point where they are unsafe to operate, if they can be operated at all.

But the worst times for the well servicing industry are in the past. Activity already has rebounded and operators plan to spend more money for well servicing in the coming year.

Oil prices are creeping up, and the natural gas bubble is slowly dissolving. The natural gas situation is particularly encouraging for the well servicing industry, because few gas wells have been adequately maintained recently. Many operators may be surprised when they try to bring a well back on production and find it will take more than opening a valve.

As the industry rebounds, the biggest hurdle remaining may be psychological. There is more business out there than at any time during the 1970s. The industry has to get its hands dirty again and go get it. And the survivors will.

Acknowledgement. Data presented were based on PETROLEUM ENGINEER INTERNATIONAL's 1983 well servicing survey. Responses came from more than 200 independent and integrated companies. Appropriate data base used for projections was corroborated with data published by API. PEI also thanks Baker Oil Tools for helping to distribute surveys. Photos throughout the article are courtesy of Pool Co. ■

OVERSIZE FOLDOUT(S) FOUND HERE IN THE PRINTED EDITION OF THIS VOLUME ARE FOUND FOLLOWING THE LAST PAGE OF TEXT IN THIS MICROFICHE EDITION.

SEE FOLDOUT NO 1

Production Costs Decrease In 1983

Summary of equipment costs and composite indexes for primary recovery operations (10 producing wells)

Area	1981	1982 Index (1976 = 100)	1983*	1983* Cost, $
		2,000-ft wells		
California	174.2	178.2	159.3	799.700
Oklahoma	166.1	169.2	145.3	508.300
South Louisiana	171.4	174.1	150.8	558.100
South Texas	167.7	170.9	145.9	518.600
West Texas	168.0	171.0	146.6	517.300
Wyoming	168.5	174.8	157.9	556.400
Average	169.6	173.4	151.5	576.400
		4,000-ft wells		
California	171.0	176.2	153.9	1.081.400
Oklahoma	167.8	171.4	141.9	714.100
South Louisiana	177.6	181.7	165.3	704.100
South Texas	168.0	172.7	152.4	663.900
West Texas	170.1	173.5	147.8	748.700
Wyoming	170.5	176.3	156.7	795.300
Average	170.7	175.2	152.8	784.600
		8,000-ft wells		
California	186.1	200.6	182.4	1.665.800
Oklahoma	181.3	193.9	179.5	1.315.100
South Louisiana	180.8	183.1	162.9	897.400
South Texas	169.5	172.6	147.5	832.800
West Texas	173.7	176.7	153.8	1.364.300
Wyoming	171.5	176.2	155.8	1.392.800
Average	177.3	184.5	164.4	1.244.700
		12,000-ft wells		
California	189.0	204.8	182.8	2.057.500
Oklahoma	194.5	213.2	190.7	1.852.400
South Louisiana	194.5	212.1	191.3	1.975.200
South Texas	195.3	213.4	189.8	1.925.900
West Texas	195.8	214.1	191.6	1.903.800
Wyoming	197.9	214.9	193.6	1.903.200
Average	194.4	211.9	189.8	1.936.300
Aggregate average	181.5	191.6	170.0	1,135.500

*Preliminary

Note Reported average or aggregate average indexes are indexes of the average costs They are not an average of the index values

The average cost of equipment for primary oil recovery operations in the U.S. decreased by 11.3% in 1983, compared with a 5.6% increase in 1982, according to the Department of Energy's Energy Information Administration.

EIA's latest report on Costs and Indexes for Domestic Oil and Gas Field Equipment and Production Operations reveals that decreases in costs from 1982 to 1983 varied with depths – ranging from 10.4% for 12,000-ft wells to 12.8% for 4,000-ft wells. These decreases are credited to large decreases in tubing costs, which, EIA says, also account for variation with depth, because higher grades of tubulars were not discounted as much as the lower grades. If tubing costs are excluded, equipping costs rose 2.9% in 1982 and fell by 3.3% for 1983.

In 1983, equipment (excluding tubing) costs for 12,000-ft wells went up by approximately 1%. Decreases (again excluding tubing costs) of 10.8%, 8.9%, and 3.8% for 2,000-, 4,000-, and 8,000-ft wells, respectively, were observed.

By areas, the EIA report finds that Oklahoma had the largest decrease in equipping costs (6.5%) and south Louisiana had the smallest (4.1%).

Overall operating costs for primary oil recovery operations in the U.S. are reported to have decreased by less than 1% during 1983, compared with an 11.5% increase in 1982. Average primary operating costs for the six areas covered by the EIA study decreased almost uniformly for the shallower depths, which had rod or gas lift installations. The 12,000-ft wells, or hydraulic lift installations, had an increase of less than 1%. Average primary operating cost for a 12,000-ft well was more than twice that for a 2,000-ft well.

Cost increases for primary operations had larger variations when aggregated at the area level. Oklahoma, for example, had an operating cost increase of 4%, and California had a decrease of 7.2%. When depth is also considered, primary operating cost increases varied even more. In California, leases with 4,000-ft wells had an 8.1% decrease in 1983, while 8,000-ft wells in Oklahoma had the largest cost increase (5%).

Costs for the component "Fuel, Power, and Water" increased for all primary production operations in all areas except California, where those costs decreased by approximately 12%. Wyoming had the largest increases in Fuel, Power, and Water costs (7% to 12%).

Annual operating costs for offshore production operations in the Gulf of Mexico decreased by 5.8% in 1983, following a 1.3% increase in 1982. Most of this decrease can be attributed to decreased costs for workovers and related services in 1983. The average operating costs for 12-slot platforms decreased by 5.8% in 1983, compared with a 5.6% decrease for 18-slot platforms. Averaging costs by water depth gives a 5.6% decrease for platforms in 100 ft and 300 ft of water, and a 5.4% decrease for platforms in 600 ft of water in 1983.

Gas Equipment

EIA's index for the aggregate cost of gas lease equipment for all depths and areas indicates a continuation of the moderation in equipping costs increases (13.6% in 1980, 9.5% in 1981, 3.8% in 1982, and a 7.9% decrease in 1983). The 1983 decrease brought costs down to a level lower than those of 1981.

The dominant factor in determining gas well equipment costs is the production capacity of the equipment. For 1982, the increases in equipment costs aggregated by production rate ranged from 2.3% for 5 MMcfd wells to 6.2% for 50 Mcfd wells. This was a reversal of the trend seen for the last few years and is probably a result of the slackening in demand for deep gas well equipment.

In 1983, the changes ranged from a 9.9% decrease for 1 MMcfd wells to a 3.5% decrease for 10 MMcfd wells.

Operating costs for gas leases aggregated for all depths, areas, and production rates increased 16% and 6.5% in 1981 and 1982, respectively. They then decreased by 1.1% in 1983. Production string protection and labor-related costs caused most of the increases for gas wells in 1981 and 1982, but these costs changed little in 1983.

Summing the costs over all depths and production rates by area and calculating the percent changes tells EIA that South Texas had a decrease of 6.6%, while West Texas had the highest increase (0.8%). North and south Louisiana costs decreased less than 2%, and the Mid-Continent and Rocky Mountain areas had increases of less than 1%.

Copies of the complete report (DOE/EIA-0185[83]) are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

UT Developing Gulf Coast Data Base

A data base on Gulf Coast petroleum reservoirs is being developed by the University of Texas's Center for Energy Studies and the Department of Petroleum Engineering.

Expected to be more detailed than any other system publicly available, the system is being tested this summer and should be functioning by fall, according to Dr. Kamy Sepehrnoori, assistant professor of petroleum engineering and coordinator of the project.

Sepehrnoori said that the system is designed so that a researcher can sit down at a terminal, type in questions using key words, and receive a paper printout of the information requested.

A researcher could, for example, ask such questions as:

- What wells in X County, Texas, have had bottomhole pressures of more than 10,000 psia?
- What has been the history of production of X well?
- What have been the production rates of all wells treated with acid in the last 5 years in X County, Louisiana?

Initially, the well and reservoir data base will cover 400 wells, onshore and off, in Texas and Louisiana. Logging and header information for the wells already has been compiled, and the researchers are entering more data in about 40 new categories, including geology, geophysics, petrophysics, paleontology, production, well testing, well stimulation, abnormal pressure zones and blowouts, formation water analysis, and hydrocarbon analysis.

This year, the data base will be available only through terminals at the University of Texas at Austin. Remote access is possible later, Sepehrnoori said.

NAM Strikes Gas Offshore Netherlands

A significant gas discovery has been completed by Nederlandse Aardolie Maatschappij (NAM) in Block L13, some 31 miles northwest of Den Helder, Netherlands. The well tested gas at a combined rate of more than 90 MMcfd from zones at 11,500 and 10,800 ft.

NAM is operator of the block for a group that also includes Clam Petroleum Co., Aminoil Netherlands Petroleum Co., Oranje-Nassau Energie B.V., and DSM-Aardgas B.V. They used the jackup rig Neddrill 4 to drill the well.

Seagull Discovery Offshore Corpus

Seagull Energy E&P Inc. has a gas discovery in Mustang Island Block 915 in state waters offshore Corpus Christi, Tex.

Drilled to total depth of 9,842 ft, Seagull's wildcat tested 5,575 Mcfd of gas and 72 b/d of condensate through an 18/64-in. choke at flowing tubing pressure of 2,325 psi from one zone. From another zone, it tested 2,194 Mcfd of gas and 36 b/d of condensate through a 12/64-in. choke with 2,365 psi pressure.

Global Tests New Pool Discovery

Global Natural Resources Inc.'s Hilda Parr No. 4-A, a new pool discovery in Duval County, Texas, tested 2 MMcfd of gas and 188 b/d of condensate on a 12/64-in. choke with 2,826 psi flowing tubing pressure and no associated water.

The Basal Yegua sand was perforated at 7,462-69 ft and at 7,473-80 ft, establishing deeper production in the Orcones field area.

Hrubetz Wildcat In Powder River Basin

Hrubetz Oil Co.'s No. 1-16 Thorson wildcat was drilled to total depth of 7,200 ft and completed as a Minnelusa oil discovery with production from an interval at 6,970 to 7,011 ft.

Located in Crook County, Wyoming, the well tested 551 b/d of oil and 350 b/d of water.

Panarctic Tests Delineation Well

Panarctic Oils Ltd.'s Skate C-59 stepout well, located approximately 2 miles southeast of the Skate B-80 discovery well and 12 miles off the northeast coast of Lougheed Island, has been tested over two intervals.

A drillstem test in the King Christian formation, at 3,317-27 ft, tested up to 6.8 MMcfd of gas along with up to 172 b/d of oil and some formation water. Production testing of the interval at 3,258-80 ft tested up to 16.3 MMcfd of gas. A preliminary absolute open flow for the well in this zone is calculated to be 50.5 MMcfd. The well was drilled to total depth of 7,546 ft from an ice platform in 1,207 ft of water.

Phil R. Monticello (left), petroleum engineering manager for Texaco USA's Denver operating division, and C. A. Pate (center), district petroleum engineer for Texaco in Tulsa, deliver a $2,500 check from Texaco's Philanthropic Foundation Inc. to Dr. Billy Crynes, professor and head of Oklahoma State University's School of Chemical Engineering. The check is being given to support the petroleum engineering option at OSU.

#1

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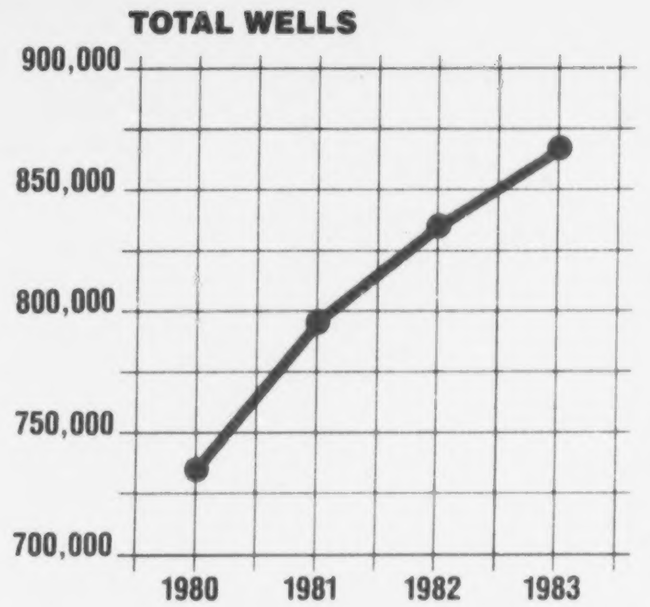
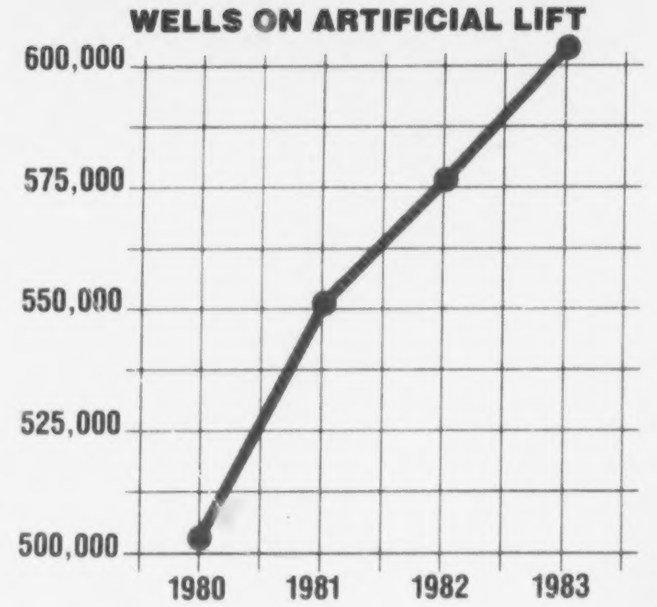
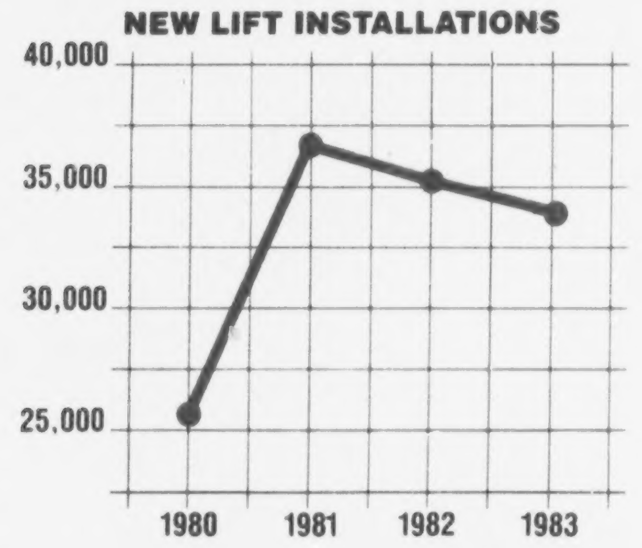
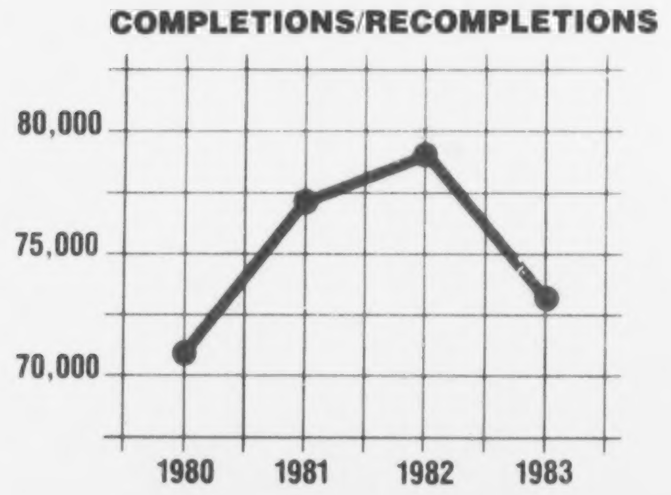
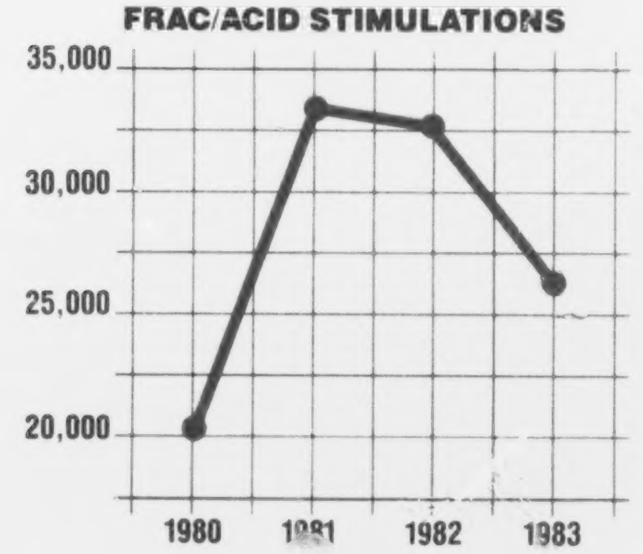
U.S. WELL SERVICING 1983

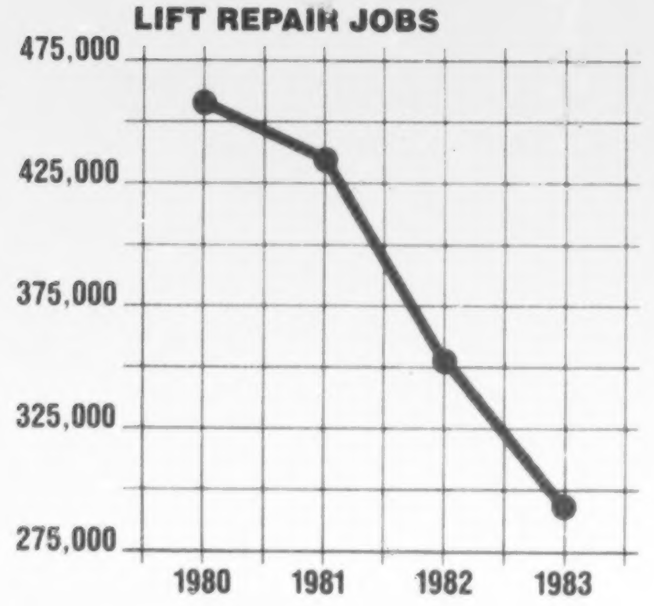


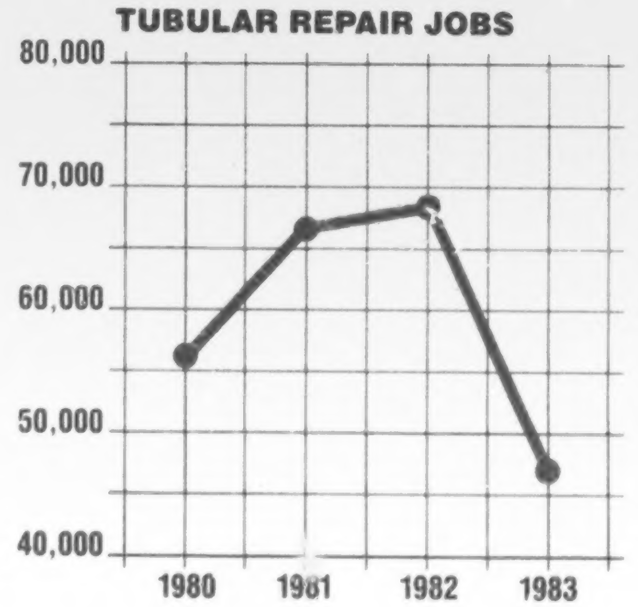


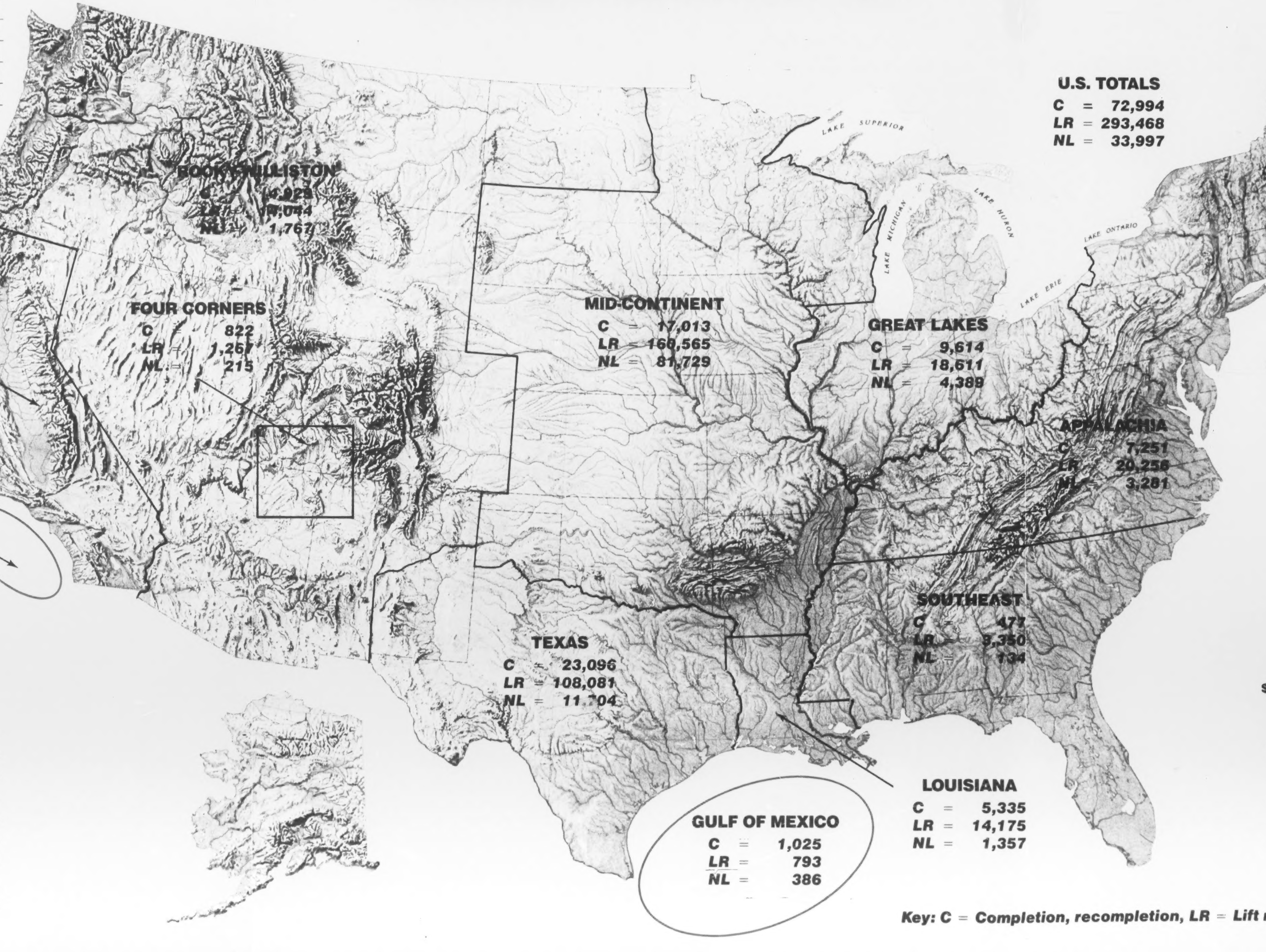








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LR = 293,468
NL = 33,997
ROCKY/WILLISTON
C = 4,929
LR = 19,044
NL = 1,767
CALIFORNIA ONSHORE
C = 3,262
LR = 30,647
NL = 2,132
FOUR CORNERS
C = 822
LR = 1,267
NL = 215
CALIFORNIA OFFSHORE
C = 170
LR = 515
NL = 108
MID-CONTINENT
C = 17,013
LR = 160,565
NL = 81,729
GREAT LAKES
C = 9,614
LR = 18,611
NL = 4,389
APPALACHIA
C = 7,251
LR = 20,256
NL = 3,281
SOUTHEAST
C = 477
LR = 9,350
NL = 134
TEXAS
C = 23,096
LR = 108,081
NL = 11,704
LOUISIANA
C = 5,335
LR = 14,175
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GULF OF MEXICO
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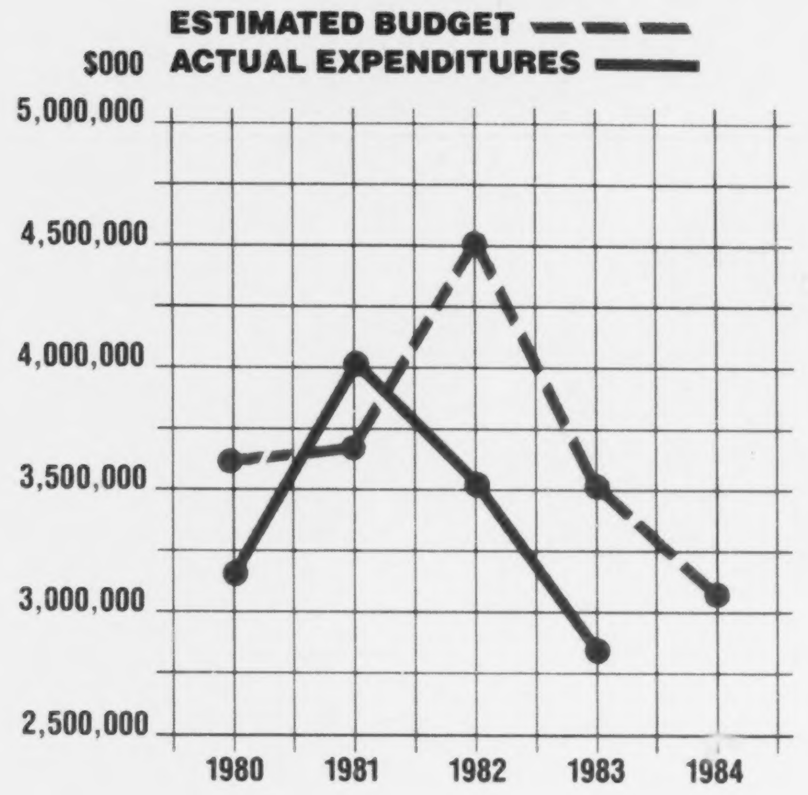
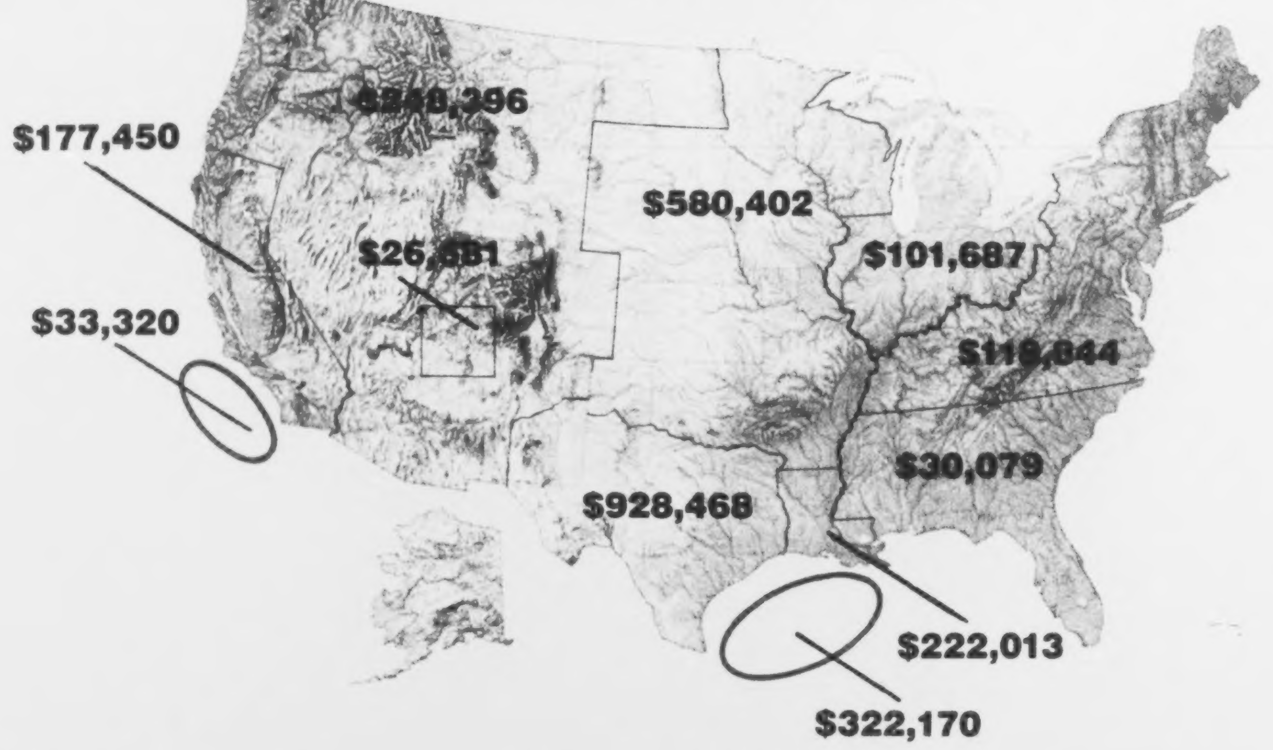


1983 WELL SERVICING EXPENDITURES
U.S. TOTAL = $2,789,510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$33,320
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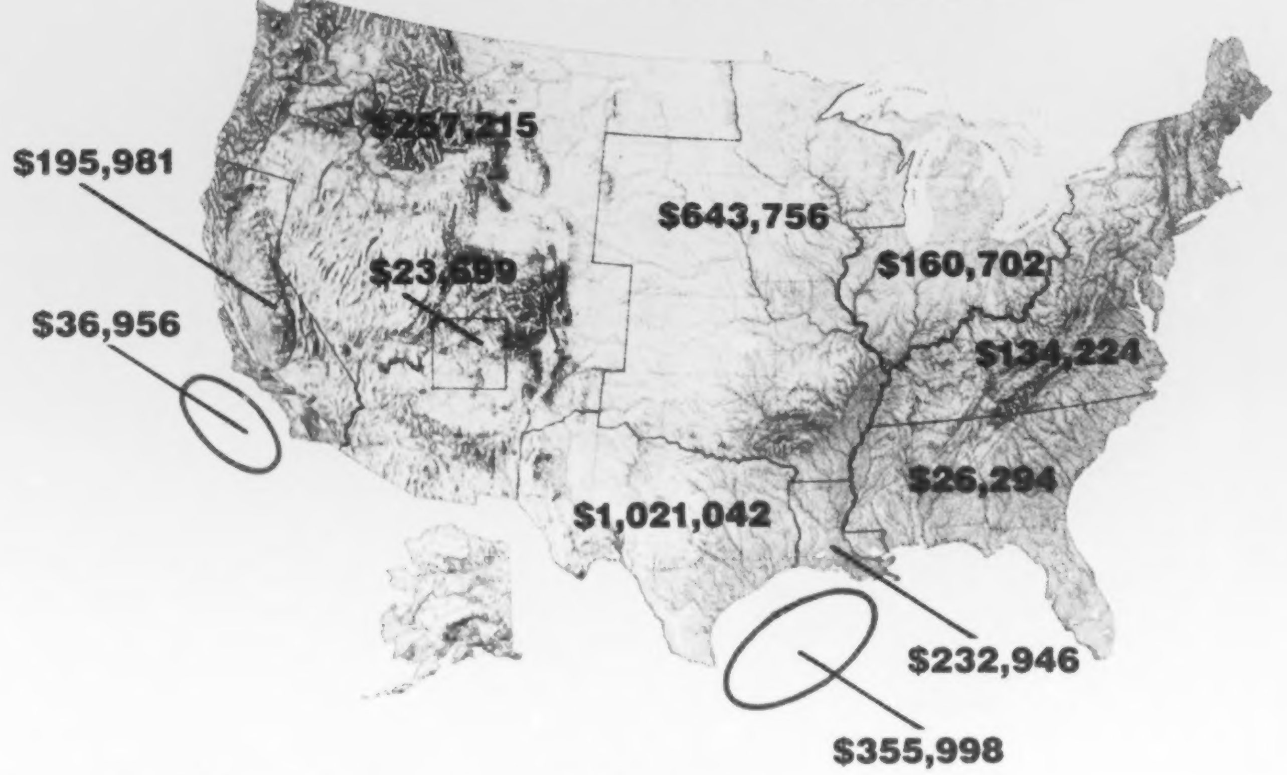
$928,468
$222,013
$322,170

ESTIMATED 1984 WELL SERVICING BUDGETS
U.S. TOTAL = $3,088,813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$195,981
$643,756
$23,699
$160,702
$36,956
$134,224
$26,294
$1,021,042
$232,946
$355,998

Key: *C = Completion, recompletion, LR = Lift repair, NL = New lift installation*

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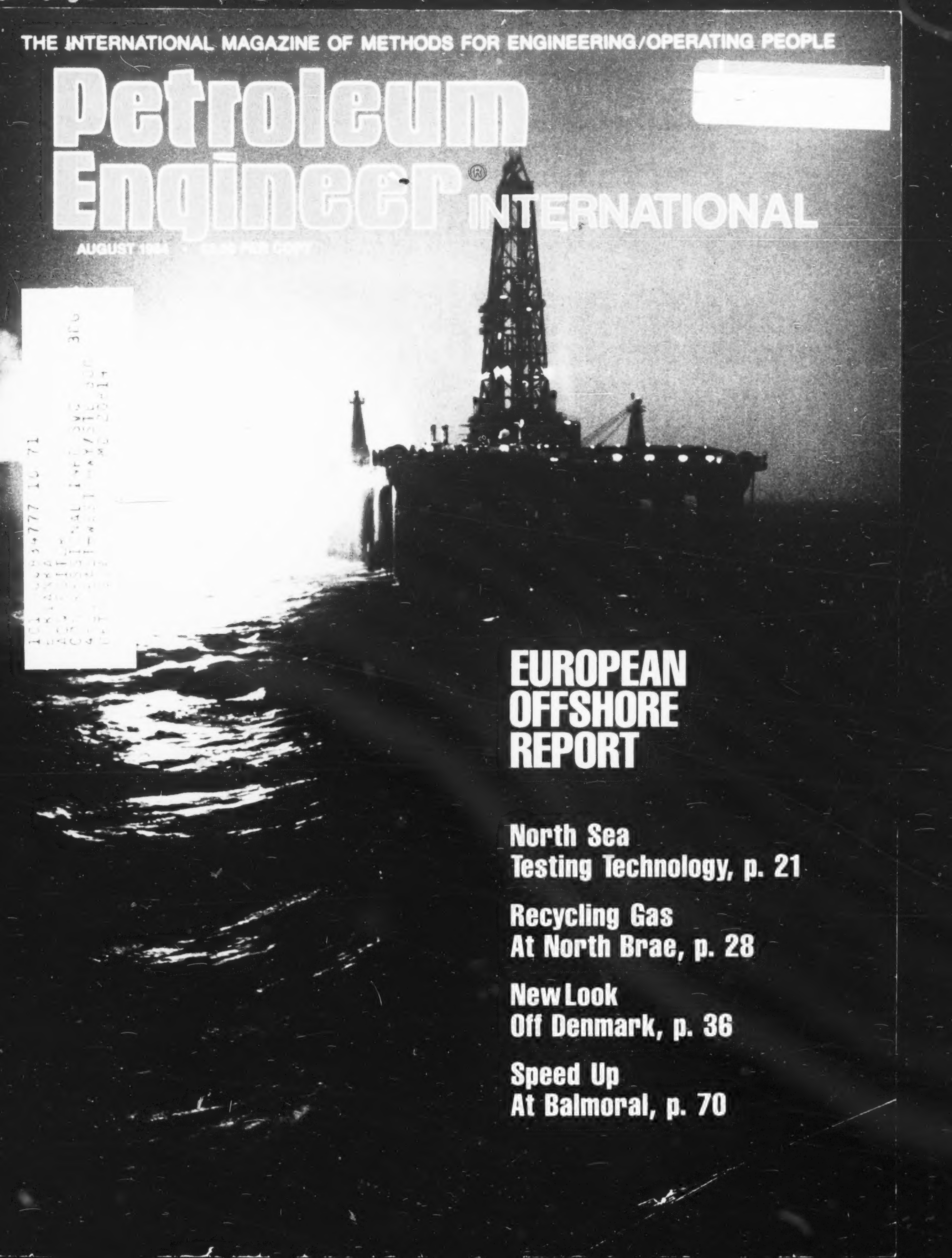

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Average U.S. Rotary Rig Count Moving Up

Despite a hint of indecisiveness in late June and early July, U.S. drillers succeeded in turning around the year's average rig count which had been on a steady decline ever since the January 9 count of 2,724.

Low point for the year came on June 4, when the year-long average dipped to 2,349.3. By mid-July, the count had risen above 2,353 although twice during that period the rig count experienced declines from the previous week's count.

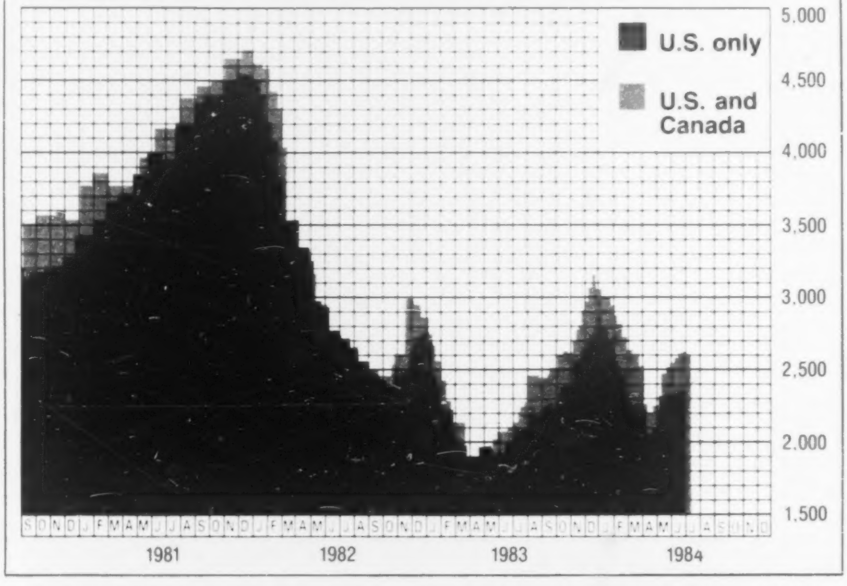
In 1983, the midyear rig count stood at 2,108, some 244 rigs lower than the count this year after 26 weeks. Completions, however, were only slightly higher this year. Petroleum Information Corp. reported last month that 41,438 wells were drilled in the U.S. during the first half of 1984. That is only 67 more wells than were credited to the first 6 months of 1983.

PI adds that the number of oil discoveries this year is higher, but gas discoveries are down sharply, reflecting decreased emphasis on gas exploration.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	June 18, 1984	June 25, 1984	July 2, 1984	July 9, 1984
Alabama				
Land	9	8	7	8
Inland Waters	2	2	2	2
Offshore	2	2	2	2
Alaska				
Land	8	8	7	8
Offshore	1	1	1	2
Total	9	9	8	10
Arkansas	25	22	24	23
Arizona	1	1	1	1
California				
Land	81	84	97	96
Offshore	15	12	13	14
Total	96	96	110	110
Colorado	47	53	51	51
Florida	3	3	6	6
Hawaii	1	1	1	1
Idaho	1	1	1	1
Illinois	53	53	53	54
Indiana	6	7	6	7
Kansas	127	137	129	129
Kentucky	11	11	11	11
North Louisiana	29	28	29	26
South Louisiana				
Inland Waters	51	56	57	55
Land	85	86	83	83
Offshore	122	117	110	115
Total	287	287	279	279
Michigan	33	33	28	38
Mississippi	26	33	26	25
Montana	33	33	33	37
Nebraska	8	8	8	12
Nevada	6	3	3	4
New Jersey	1	1	1	1
New Mexico	70	71	73	72
New York	10	10	9	9
North Dakota	53	53	54	57
Ohio	45	45	46	47
Oklahoma	299	316	312	316
Pennsylvania	37	36	37	35
South Carolina	1	1	0	0
South Dakota	1	1	1	3
Tennessee	0	0	1	1
Texas				
Offshore	64	69	67	68
Inland Waters	4	3	0	1
Dist. 1-S. Central Tex.	16	20	19	17
Dist. 2-Middle Tex. Coast	31	22	27	25
Dist. 3-Upper Tex. Coast	100	105	104	107
Dist. 4-Lower Tex. Coast	80	75	74	68
Dist. 5-Northeast Tex.	32	33	33	25
Dist. 6-Far Northeast Tex.	67	76	77	77
Dist. 7B-N. Central Tex.	53	52	43	46
Dist. 7C-W. Central Tex.	44	52	53	52
Dist. 8-Far West Tex.	156	158	151	148
Dist. 8A-West Tex.	86	67	68	65
Dist. 9-North Tex.	74	75	81	77
Dist. 10-Tex. Panhandle	57	59	51	48
Total	864	866	848	824
Utah	40	41	40	39
Virginia	3	3	3	3
Washington	0	0	1	1
West Virginia	42	44	49	47
Wyoming	108	110	103	108
Total U.S.	2,360	2,401	2,367	2,374
Canada	214	245	243	250
Canada-Offshore	14	13	14	15
U.S. and Canada	2,588	2,659	2,624	2,639



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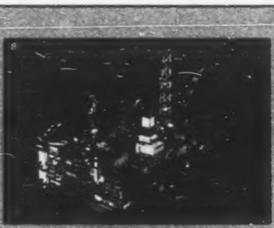

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EUROPEAN OFFSHORE REPORT

Petroleum Engineer International's drilling editor, Steven D. Moore, traveled extensively throughout Western Europe earlier this year to gather information about noteworthy oil and gas activities underway or beginning in European waters. The five articles resulting from those travels comprise the European Offshore Report that is the theme of this month's issue of PEI. Written by Mr. Moore, the articles begin on pages 21, 28, 36, 48, and 70.

BP Pushes Ahead With North Sea Projects 21

Undertakings that are putting the company's technological and engineering know-how to the test involve old and new fields as well as conceptual plans for fields yet to be exploited.

Marathon Readies For North Brae Development 28

Total weight of the conventional steel platform, designed for a 325-ft water depth, will be 66,000 tons, including piles. The topsides will provide room for two drilling rigs and 240 people.

Offshore Denmark Picks Up Steam 36

An interconnecting pipeline system between production complexes will allow natural gas production to be exported for the first time. It also will provide DUC with a new way to route oil to shore.

KCA Drilling Combats Freak Seas 48

Underwater waves surging against each other from opposite directions in the western Mediterranean Sea are caused, in part, by differing densities of waters near the Strait of Gibraltar.

Modern Production Risers, Part 12 52

by George W. Morgan, Engineering Consultant. For those regions of the world subjected to extreme weather conditions, careful equipment design is essential.

Electrical Submersible Pump Teardown Inspection, Part 5 66

by James F. Lea, Amoco Production Co., and William J. Powers, TRW Reda. Post-run inspection can lead to identification of problems and selection of more suitable equipment.

Balmoral Field Activity Speeds Up 70

State-of-the-art technology includes the first purpose-built floating production vessel, plus a flexible riser system for communication between a seafloor template and the FPV.

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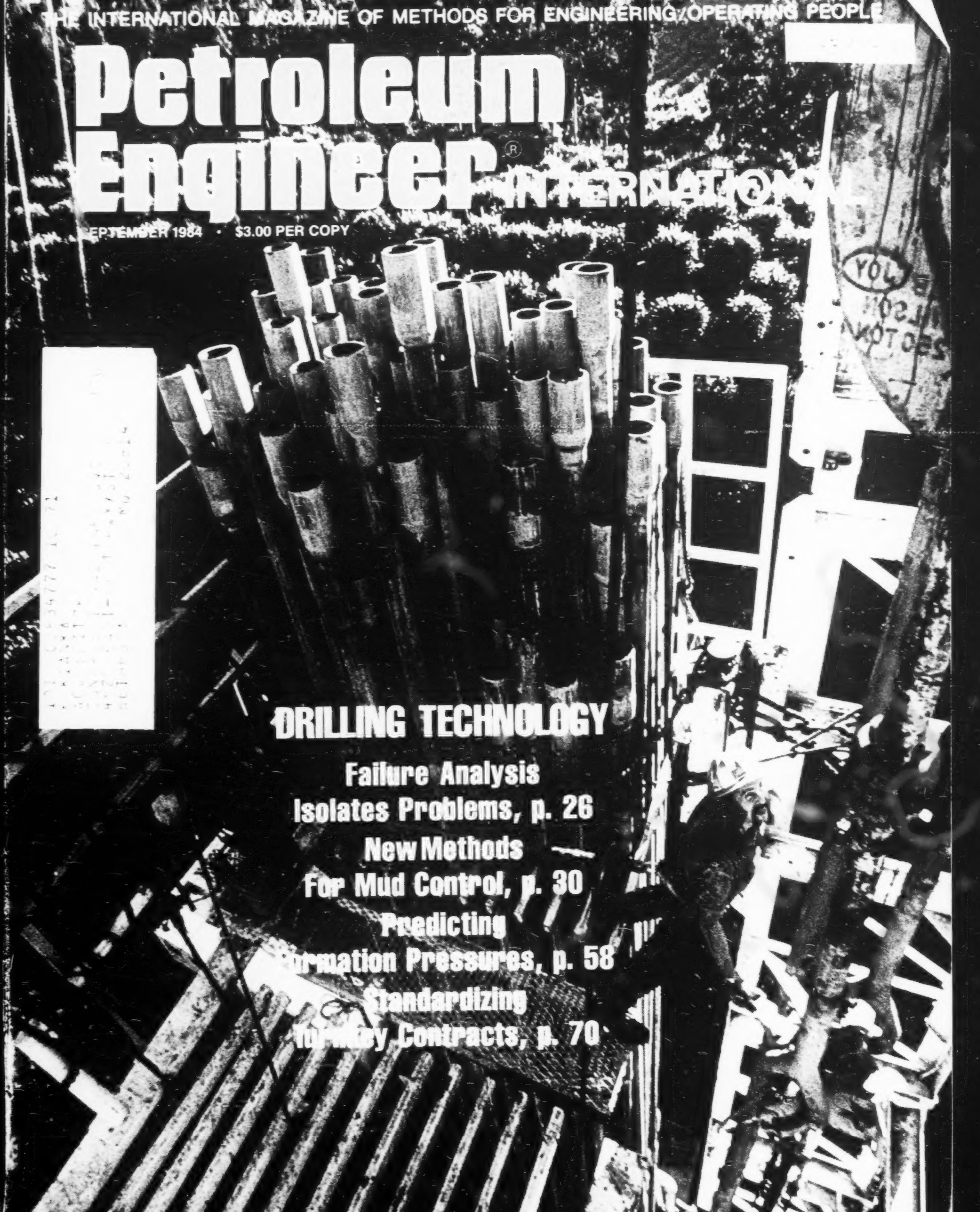
ABOUT THE COVER: A delineation well is being tested at North Sea Sun Oil Co. Ltd.'s Balmoral field in the North Sea. See full story on page 70.

NEXT MONTH: Improved efficiencies resulting from better technologies are highlighted in the Drilling Technology Report in September.



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DRILLING TECHNOLOGY

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New Methods For Mud Control, p. 30

Predicting Formation Pressures, p. 58

Standardizing Turnkey Contracts, p. 70

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Rig Count Seems Back On Track

The U.S. rotary rig count seems to be headed up again, as of mid-August, after having hovered at about the 2,400-mark during June and July.

Canada's drillers also are putting up good numbers after having survived their annual springtime slump, which bottomed out at 90 active rigs on April 30 this year.

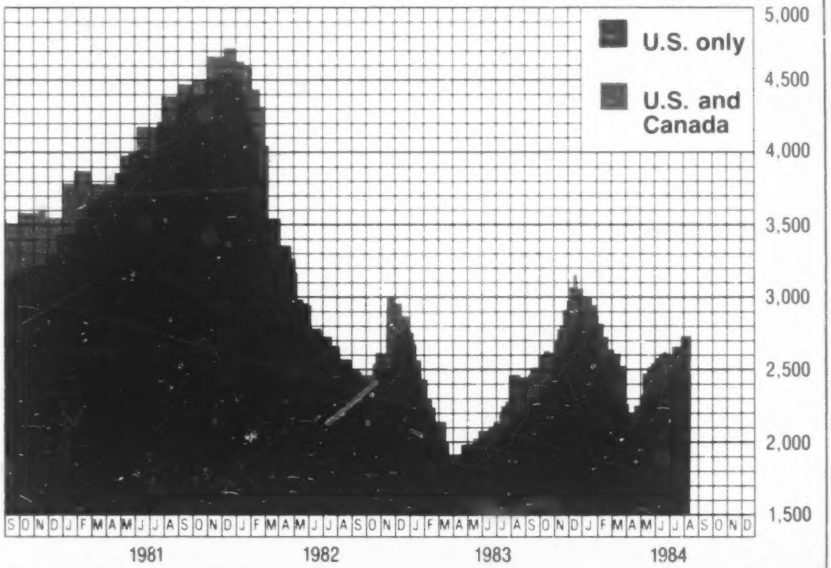
Looking ahead, the 60,832 drilling permits issued in the U.S. so far this year (as of August 3) represent a 7.4% increase over the same period last year. Petroleum Information Corp., which counts such things, also says that the 2,447 permits issued during the week ending August 3 are a 22.4% increase over the same week in 1983.

Leading U.S. drilling state continues to be Texas, with Louisiana and Oklahoma running neck and neck for second place. Kansas and Wyoming are in a close race for fourth place. And California is fifth.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	July 23, 1984	July 30, 1984	Aug. 6, 1984	Aug. 13, 1984
Alabama				
Land	10	10	10	12
Inland Waters	2	3	3	4
Offshore	3	2	2	2
Total	15	15	15	18
Alaska				
Land	9	9	9	8
Offshore	5	6	6	7
Total	14	15	15	15
Arkansas	32	29	30	29
California				
Land	94	88	88	96
Offshore	11	16	14	16
Total	105	104	102	112
Colorado	56	51	51	52
Florida	6	5	5	4
Idaho	1	0	0	0
Illinois	56	55	53	53
Indiana	8	8	8	8
Kansas	127	129	131	129
Kentucky	11	11	11	11
North Louisiana	24	26	32	33
South Louisiana				
Inland Waters	51	48	46	45
Land	91	90	92	91
Offshore	129	128	126	125
Total	295	292	296	294
Maryland	1	1	1	0
Michigan	33	35	39	40
Mississippi	25	23	28	33
Montana	43	41	39	38
Nebraska	7	8	7	9
Nevada	5	5	6	8
New Jersey Offshore	1	1	1	1
New Mexico	72	77	75	76
New York	9	8	9	6
North Dakota	62	61	67	72
Ohio	49	52	52	51
Oklahoma	299	309	288	292
Pennsylvania	34	35	40	45
South Dakota	3	1	2	2
Tennessee	1	1	1	1
Texas				
Offshore	63	62	62	63
Inland Waters	2	3	5	5
Dist. 1-S. Central Tex.	19	19	19	19
Dist. 2-Middle Tex. Coast	25	27	26	23
Dist. 3-Upper Tex. Coast	106	92	88	96
Dist. 4-Lower Tex. Coast	80	81	89	85
Dist. 5-Northeast Tex.	28	30	34	34
Dist. 6-Far Northeast Tex.	76	72	77	75
Dist. 7B-N. Central Tex.	44	45	50	44
Dist. 7C-W. Central Tex.	56	54	54	54
Dist. 8-Far West Tex.	150	141	141	144
Dist. 8A-West Tex.	76	70	68	74
Dist. 9-North Tex.	69	70	73	71
Dist. 10-Tex. Panhandle	41	40	38	42
Total	835	806	824	829
Utah	43	51	51	51
Vermont	1	1	1	1
Virginia	3	4	3	5
Washington	1	1	1	1
West Virginia	47	48	46	40
Wyoming	115	114	119	121
Total U.S.	2,415	2,397	2,417	2,447
Canada	236	236	257	273
Canada-Offshore	8	13	12	12
U.S. and Canada	2,659	2,646	2,686	2,732



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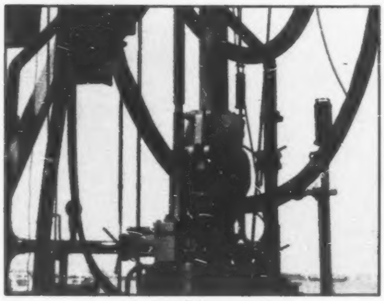

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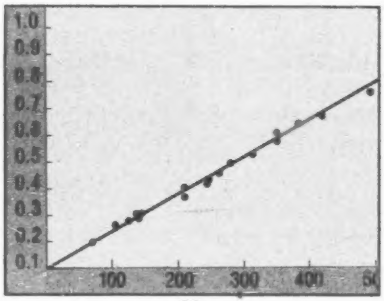

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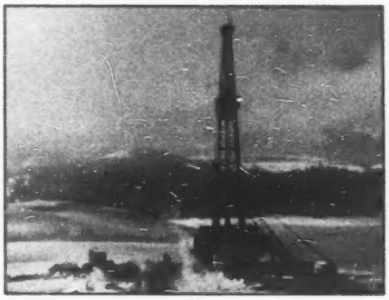

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DRILLING TECHNOLOGY

No Slowdown Seen In Drilling Technology 21
by Richard D. McNally, Associate Editor, and Steven D. Moore, Drilling Editor. Some of the technological achievements in drilling that have transpired in the last few years are highlighted in a review that also looks to the future.

Failure Analysis Isolates Drilling Problems 26
by Stanford A. Smith Jr. and James D. Garber, University of Southwestern Louisiana, and Larry White, Weintritt Laboratories. A perspective of the most common failures that occur in drilling, and how to prevent them.

New Methods For Low-Solids Mud Control, Part 1 30
by J. C. Estes and D. B. Anderson, Amoco Production Co., and G. R. Benta, Welchem Inc. A simple test that can be performed at the rig location is accurate enough to indicate whether further testing by laboratory analysis is required.

Graphs Show Liquid Compressibility Factors 46
by Dr. Tarek Ahmed, Gustav Stolz, and Michael Striefel, Montana College of Mineral Science and Technology; and Mark Lombardi, Shell California Production Inc. A function of reduced pressure, reduced temperature, and molecular weight.

Electrical Submersible Pump Teardown Inspection, Part 6 54
by James F. Lea, Amoco Production Co., and William J. Powers, TRW Reda. A detailed post-run inspection often can determine cause of failure and lead to the selection of more suitable equipment for the next installation.

Microcomputer Aids "d" Exponent Technique 58
by Xiling Sun and Scott L. Huang, University of Alaska. An accurate method for predicting formation pressures and detecting overpressure transition zones is essential for safe, economic drilling operations, even where experience is vast.

Make A Turnkey Drilling Contract Work For You 70
by Dean Pierce and John Wolfe, Rosewood Resources (POC) Inc. The responsibilities of the operator and contractor often are left unwritten in turnkey contracts, opening the door for problems when the contract is later interpreted.

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ABOUT THE COVER: Drilling technology continues to advance, and some recent achievements are highlighted on page 21. (Photo courtesy of Sun Company Inc.)

NEXT MONTH: The latest advances in both drilling and production will be featured in the October issue.

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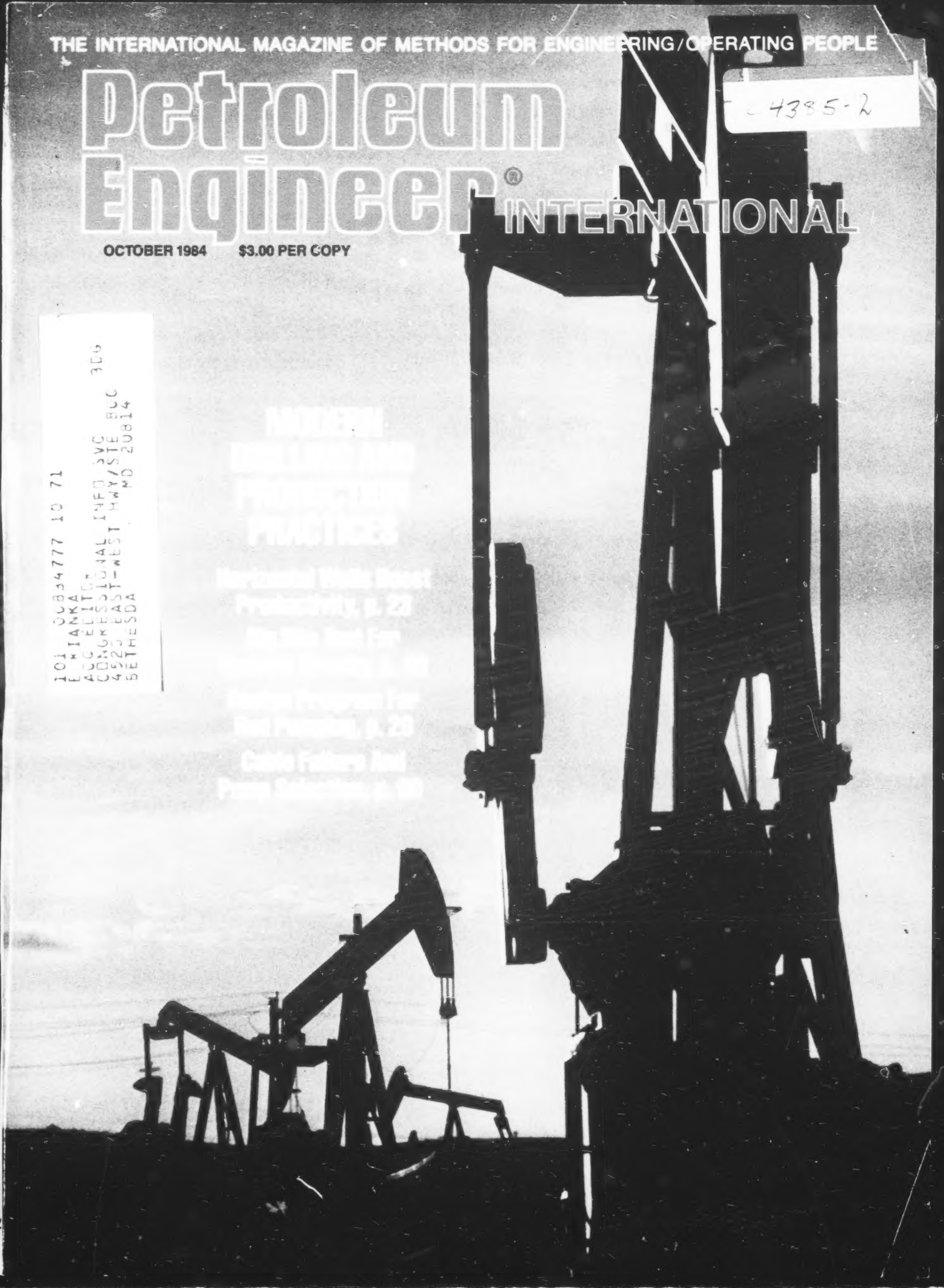

MODERN DRILLING AND PRODUCTION PRACTICES

Horizontal Wells Boost Productivity, p. 23

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Cable Failures And [illegible]

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U.S., Canadian Rotary Rig Counts Are Hovering

The U.S. rotary rig count has been hovering around the 2,400-mark ever since mid-June in an unusual display of stability that has put the year-long average rig count only 10 rigs lower than the actual count on September 10.

Canadian activity has leveled off also, with approximately 260 rigs actually making hole throughout the summer.

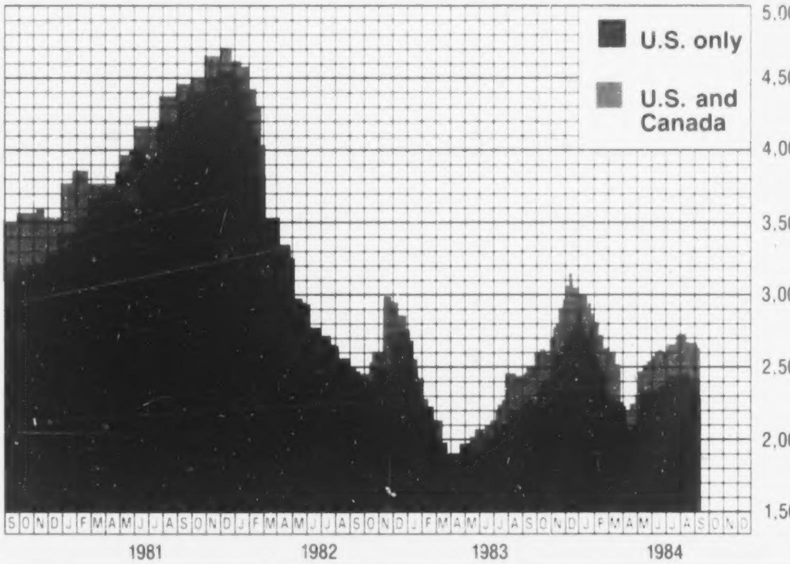
On a state-by-state basis in the U.S., there have been no major shifts. All states, in fact, have been marvels of consistency throughout the 3-month period. Illinois, for example, had 53 active rigs on June 11 and 53 on September 10. New Mexico's active rig count for July 11 was 73. And it was 73 again at mid-September. West Virginia's 43 active rigs in June were down by only one in September.

Traditionally, U.S. drilling activity increases steadily during the summer and peaks in the winter. This may not be one of those years.

Rotary rigs actually making hole in United States & Canada

As Reported To International Association Of Drilling Contractors By Hughes Tool Co.

	Aug. 20, 1984	Aug. 27, 1984	Sept. 4, 1984	Sept. 10, 1984
Alabama				
Land	11	13	12	11
Inland Waters	3	3	3	3
Offshore	1	1	1	1
Total	15	17	16	15
Alaska				
Land	9	9	9	8
Offshore	9	6	5	5
Total	15	15	14	13
Arkansas	28	31	30	29
California				
Land	91	84	90	84
Offshore	14	17	17	17
Total	105	101	107	101
Colorado	50	57	57	58
Florida	3	3	2	2
Illinois	55	53	50	53
Indiana	8	8	8	8
Kansas	131	135	143	139
Kentucky	11	9	9	9
North Louisiana	31	32	32	27
South Louisiana				
Inland Waters	43	44	47	47
Land	87	87	94	89
Offshore	134	134	134	129
Total	295	297	307	292
Michigan	40	41	37	38
Mississippi	38	40	40	40
Montana	36	37	40	41
Nebraska	8	6	6	5
Nevada	8	8	7	5
New Jersey				
Offshore	1	1	1	1
New Mexico	73	72	79	73
New York	7	7	9	7
North Dakota	61	54	55	55
Ohio	51	59	59	57
Oklahoma	300	275	278	281
Pennsylvania	44	43	42	41
South Dakota	2	3	3	2
Tennessee	1	1	1	1
Texas				
Offshore	64	57	57	58
Inland Waters	5	5	5	5
Dist. 1-S. Central Tex.	15	16	15	13
Dist. 2-Middle Tex. Coast	24	29	32	35
Dist. 3-Upper Tex. Coast	93	97	90	92
Dist. 4-Lower Tex. Coast	82	83	81	75
Dist. 5-Northeast Tex.	34	33	37	34
Dist. 6-Far Northeast Tex.	74	79	75	69
Dist. 7B-N. Central Tex.	48	47	45	43
Dist. 7C-W. Central Tex.	52	48	47	46
Dist. 8-Far West Tex.	146	149	147	148
Dist. 8A-West Tex.	64	60	73	75
Dist. 9-North Tex.	66	67	68	74
Dist. 10-Tex. Panhandle	43	39	39	38
Total	810	809	811	805
Utah	47	47	49	46
Vermont	1	1	1	1
Virginia	4	4	4	4
Washington State	1	1	1	1
West Virginia	41	37	42	42
Wyoming	119	123	116	112
Total U.S.	2,409	2,395	2,424	2,377
Canada	250	243	248	245
Canada-Offshore	13	17	18	18
U.S. and Canada	2,672	2,655	2,690	2,640



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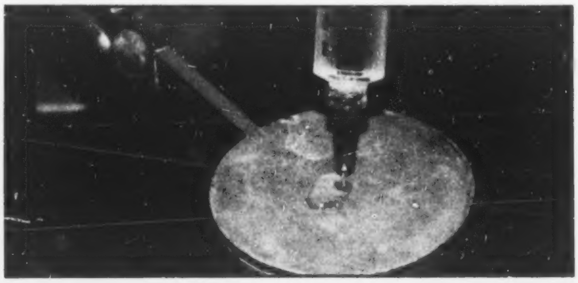

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MODERN DRILLING AND PRODUCTION PRACTICES

Horizontal Well Proves Productivity Advantages 23

by Andre P. Jourdan, Elf Aquitaine, and Guy Baron, Institut Français du Pétrole. Behavior of vertical wells in the reservoir indicated that a horizontal hole would increase the chances of intersecting vertical fractures.

Hand-Held Computer Designs Rod Pumping Installation 26

by John D. Herlihy, John W. McGowan. Experience shows that use of a standing salt water fluid level for the working depth plus 200 ft works well. The 200 ft compensate for the additional pressure that is required to load the pump barrel.

New Methods For Low-Solids Mud Control, Part 2 40

by J. C. Estes and D. B. Anderson, Amoco Production Co., and G. R. Benta, Welchem Inc. A procedure for determining the specific gravity of barite is reliable, simple, and can be performed with equipment found in the field.

Modern Production Risers, Part 13 48

by George W. Morgan, Engineering Consultant. The general problem in full-scale riser testing, for verification of analytical algorithms, involves simultaneous recording of at least three major categories of events.

How Improper Pump Selection Influences ESP Cable Failure 60

by John Beavers, Centrilift-Hughes. Low well productivity, either from a pumped-off or gas-locked condition, generates excessive heat in the pump because velocity of the fluid past the motor is less than the necessary 1 ft per second.

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ABOUT THE COVER: New technology and equipment pave the way for advances in drilling and production. (Photo courtesy of Texaco Inc.)

NEXT MONTH: The annual production improvement report in November will discuss innovative methods and materials.